

Books by the Same Author.

MY EXPERIENCES IN THE ISLAND OF CYPRUS, 1906; 2nd ed., 1908.

IN THE LAND OF THE MAPLE LEAF, 1908.

"NO ENGLISH NEED APPLY," 1909.

HANDBOOK ON RAILWAY SURVEYING, 1909.

MEMOIRS OF THE LATE COL. C. E. STEWART, C.B., C.M.G., C.I.E., 1911.

ON COLLECTING JAPANESE COLOUR-PRINTS, 1917.

JAPANESE COLOUR-PRINTS AND THE SUBJECTS THEY ILLUSTRATE (4to), 1920.

SUBJECTS PORTRAYED IN JAPANESE COLOUR-PRINTS (folio), 1922.

"WHAT SAITH THE SCRIPTURE?" 1922.

PROPHECY AND ITS FULFILMENT, 1924.

WHICH?—THE BIBLE OR MODERNISM, 1924.

THE GREAT PYRAMID: ITS CONSTRUCTION, SYMBOLISM AND CHRONOLOGY, 1925; 4th ed., 1933.

THE WITNESS OF THE GREAT PYRAMID, 1927; 2nd ed., 1928.

"THE TIMES OF THE GENTILES," 1927.

THE MYSTERY OF THE GREAT PYRAMID, 1929.

THE GREAT PYRAMID AND CURRENT EVENTS, 1929.

TRUE BIBLE CHRONOLOGY, 1930.

THE RESTORATION OF PALESTINE, 1930.

"AT MIDNIGHT A CRY!" 1932; 2nd ed., 1933.

REVELATION FULFILLED IN HISTORY, 1934.

COLLECTED ADDRESSES, 1935.

Pamphlets by the Same Author.

(Uniform Cr. 8vo, 16 pp. or 24 pp., Paper Covers.)

The Great Pyramid and Its Significance in the Present Crisis, Oct., 1930.

The True Purpose of the Great Pyramid, 1st ed., Jan., 1931 ; 2nd ed., Oct., 1933 ; 3rd (enlarged) ed., Feb., 1935.

The Present Crisis : A Retrospect of the Great Pyramid's Warnings, April, 1931.

Some Errors of Prophecy Interpretation, March, 1932.

Who are the Two Witnesses of Revelation xi ? June, 1933.

The Stone Kingdom of Daniel ii. 34 : Its Identity and Place in History, Nov., 1933.

The Significance of 666 in Revelation xiii. 18, Sept., 1934.

What Does Scripture Say About Disarmament ? Sept., 1934 ; 2nd ed., Nov., 1934.

"The Time of the End" : or the Present World-Crisis ; How Will it End ? June, 1935 ; 4th ed., Sept., 1935.

All the foregoing (except "The Time of the End") reprinted, with Notes and Additions, in *Collected Addresses* (Bale, Sons & Danielsson, Ltd.), 5s. net.

Some Opinions of the Author's Work on the Great Pyramid.

"This book (*Witness of Great Pyramid*) is of very great interest. The author, an engineer, has many interesting things to tell. The evidence for the rejection of the 'tombic' and 'accretion' theories about the Great Pyramid is convincingly stated."—*Birmingham Gazette*.

"The author is expert on the subject, and has given to it prolonged study. For the information he gives, as the result of his scientific observations, many readers will be grateful."—*Methodist Recorder*.

"A clear and convincing exposition upon a highly scientific subject, written for the benefit of the non-scientific reader. The writer combines in a remarkable degree a knowledge of scientific subjects with the ability to make them clear and interesting to the non-technical mind, and which is enhanced by a high literary standard."—*National Message*.

"A most clearly-written and comprehensive exposition of the elements of Pyramid theory, destined to play an important part in the constructive controversies of the near future. A work that should compel the attention of all interested in the Great Pyramid. A work of this nature has long been needed."—D. DAVIDSON in *National Message* (19.2.27).

"An interesting work likely to cause keen discussion."—*Light*.

"Your book on the Great Pyramid is the clearest I know of on the subject."—E. F. G.

"Am delighted with your books on the Pyramid, and appreciate to the full the knowledge you display."—H. C. A.

"You are much to be congratulated on making clear to the lay mind all the intricacies of what is, in fact, a difficult and technical subject. You have turned an object of antiquarian interest into a wonderful piece of engineering skill."—D. A. S.

"I have owned your *Great Pyramid: Its Construction and Chronology* since 1926, and cherish it."—Col. G. F. R. (India).

"I prefer the books *you* have written on the Great Pyramid to any others."—W. R. F. (U.S.A.).

"Mr. Basil Stewart, of London, and Professor Davidson are the two acknowledged authorities on the subject (of the Great Pyramid). . . . The work of Mr. Stewart, whose researches have brought about outstanding results, is simple, particularly when compared with other works on its interpretation."—*Washington Post* (U.S.A., 24.3.35).

"Perhaps you can have no conception of the impression made by your book, *The Great Pyramid*. I had not understood the Bible at all. Your work was like a key to it. I cannot put into words what it has meant to me. I am constantly meeting allusions to it in other books."—Mrs. T. C. (U.S.A.).

"I like Mr. Stewart's books better than other Pyramid writers, who are often too mathematical for the majority of readers."—Prof. A. J. A. (Sydney, N.S.W.).

"Your *Witness of the Great Pyramid* is much appreciated in Tasmania, and passing from one to another."—F. F. (Queensland.)

"I look upon you as the clearest and most able expositor that has yet arisen, and I believe implicitly in your reading of the Great Pyramid."—F. W.

"A valuable work which I very much esteem."—E. J. H.

HISTORY AND SIGNIFICANCE OF THE
GREAT PYRAMID

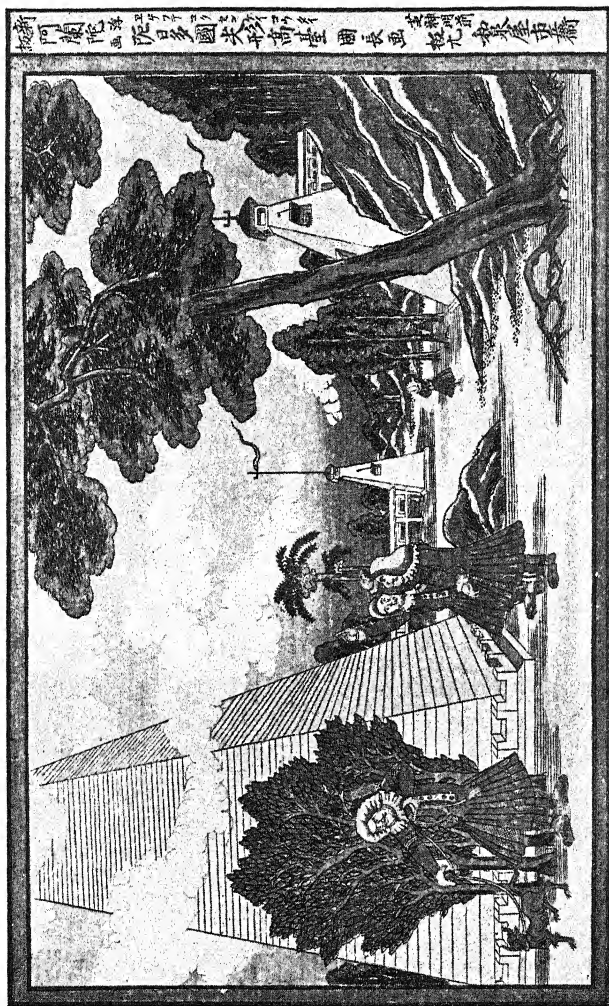
Description of Frontispiece.

This is a reproduction of a very rare—but curious and interesting—old Japanese Colour-Print, dating from about 1820-5, the original of which is in the author's collection. It is described by the artist, Utagawa Kuninaga, as a "New edition perspective picture after the Dutch: Pointed Towers in the land of Egypt"—a description which might have been taken from Julius Solinus*, who tells us that "the pyramids are *sharp-pointed towers in Egypt*, exceeding all height that may be made by man" (Bonwick), and one that Kuninaga has faithfully followed as closely as the canons of his art allowed him. On the left is a representation of the Great Pyramid, its summit lost in the clouds, and three Dutchmen standing at its base, two of them lost in wonder at the erection before them. Two other smaller pyramidal towers, with pennons flying from their summits. Note the trap-door-like openings high up on one side, and the curious galleries leading from them, obviously suggested by the entrance into the Great Pyramid high up above ground-level.

What makes this print of particular interest is the fact that, when it was drawn, over a century ago, no Japanese subject was allowed to leave the country on pain of death (if he returned), and intercourse with foreigners was taboo except with a few Dutch traders who were restricted to the island of Nagasaki. These traders were therefore the only link between Japan and the outside world. Japanese ideas of foreign countries were thus confined to hearsay, or gathered from Dutch prints introduced in the course of trade. Hence native-drawn prints in the style of European landscape with attempts at perspective (not recognized in their own canons of design) were known as *rangwa*, or "Dutch pictures." The Japanese, however, had their own style of treating landscape, borrowed from the classical Chinese school. The hermit empire, apparently, was not proof against the wonders of Egypt and its pyramids.

* Caius Julius Solinus. A Roman grammarian of the 3rd cent. A.D., author of a geographical work taken largely from Pliny.





A JAPANESE IDEA OF THE GREAT PYRAMID.
(For description see p. vi.)

History and Significance of the Great Pyramid

and the Theories and Traditions held about
it from the Earliest Days to the Present

BY

BASIL STEWART

Author of *The Witness of the Great Pyramid*; *The Mystery of the
Great Pyramid*; *At Midnight a Cry!* and many others.



Illustrated with a Frontispiece and Two Diagrams

726.8509
Ste

LONDON

JOHN BALE, SONS & DANIELSSON, LTD.,
83-91, GREAT TITCHFIELD STREET, W.1.

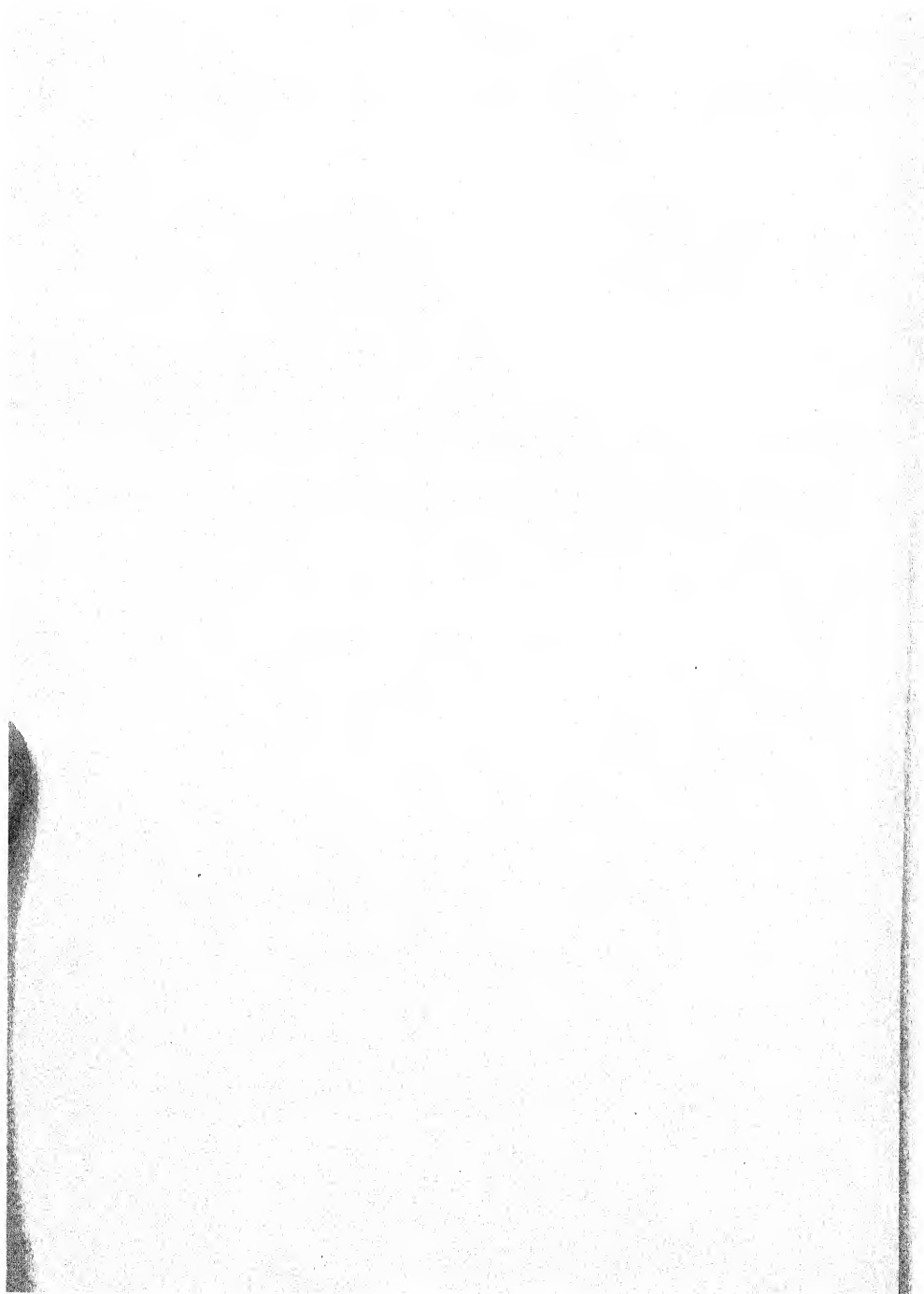


CONTENTS

	PAGE
PREFACE	xi
CHAPTER	
I. PYRAMIDOLOGISTS: ANCIENT AND MODERN	1
II. GEOMETRY IN STONE	27
III. THE TESTIMONY OF TRADITION ...	69
IV. THE GREAT PYRAMID AND ITS BUILDER...	91
V. SOME MODERN THEORIES	123
VI. ASTRONOMICAL OBSERVATORY THEORY ...	161
VII. CONCLUDING OBSERVATIONS	185
BIBLIOGRAPHY	219
INDEX TO AUTHORS QUOTED	221
GENERAL INDEX	223

LIST OF ILLUSTRATIONS

A JAPANESE IDEA OF THE GREAT PYRAMID	
	<i>[Frontispiece]</i>
GEOMETRY OF THE GREAT PYRAMID: Fig. 1 ...	62
" " " " : Fig. 2 ...	64
(ix)	



PREFACE

NO subject of archæological interest, it may safely be asserted, has proved more debatable in efforts to find a solution than the problem concerning the purpose for which the Great Pyramid was erected. While such matters generally interest none but the professed archæologist or Egyptologist, the Great Pyramid has always had a wider appeal, and in recent years may almost be said to have become a "popular" subject, not always, however, as one of genuine study, but sometimes to ridicule the matter—due, in fact, to its very popularity. This has led to the publication of unscientific treatises thereon by writers not qualified by scientific or technical knowledge to undertake the subject, which they have consequently misrepresented. Their statements have, therefore, been seized upon by others to discredit the subject in view of the contradictions introduced.

Again, ill-informed journalists and pamphleteers, knowing little or nothing about the Great Pyramid, have, when an opportunity for a "stunt" has presented itself, seized upon it and distorted it merely to attract public attention. In this connection the date May 29, 1928, will be fresh in the reader's mind, in respect of which the writer has expressed the hope (and also repeated his previous warnings

—warnings which events proved amply justified) that the sensationalism then indulged in may not be repeated as we approach its next outstanding date in the autumn of 1936.

The subject of the Great Pyramid, in fact, has suffered in the same manner that other subjects of inquiry and research have, as Mr. Lewis Spence has aptly put it in respect of archæology in his *Problem of Lemuria*, at the hands of the ill-informed and ignorant.

In discussing the "Problem of Lemuria," Mr. Spence quotes at length certain writers thereon—including Colonel James Churchward, who claimed to have discovered, about the seventies of last century, much valuable information from a recluse in a monastery (unspecified as to name or location) in Central India, afterwards published in two large volumes under the titles of *The Lost Continent of Mu* and *The Children of Mu*, Mu being the same as Lemuria. Mr. Spence then continues :—

"I have quoted these writers at some length in order that the unsupported nature of their testimony may be recognized.

"It is to be observed that such writers seldom or never make use of those scientific evidences which can be rationally employed to assist their hypotheses, and which lie naturally to their hands. They prefer rather to invent or repeat phantasies the most bizarre and grotesque, which they are aware

will satisfy or excite the feeble minds of those who crave for the pseudo-mysterious. Much as I abhor the 'tape-measure' school of Archæologists, who have succeeded in destroying the romance once seemingly inherent in their science,* I must confess to an even greater impatience with those who would transform it into a playground for the disordered and ignorant, incapable of distinguishing fiction from fact."

Study of the Great Pyramid has suffered in precisely the same manner, and with the substitution of Pyramidologists for Archæologists—also with their "tape-measure"—the foregoing would be just as appropriate. Unscientific treatises thereon, merely repeating the errors of others, or hopelessly confusing the statements of qualified exponents, have appeared from time to time, merely to satisfy the minds of those craving for the pseudo-mysterious, while journalists and others, in search for "copy," have seized upon the subject whenever an opportunity has offered itself, and "transformed it into a playground for the disordered and ignorant, incapable of distinguishing fiction from fact."

Harm has also been done to the subject of

* Elsewhere, in the Preface to his *Mysteries of Egypt*, Mr. Spence truly remarks in this connection: "For that school of archæology which, uninspired itself, denies and abhors inspiration, I can only profess that serene amusement with which archæologists of the future will assuredly regard it."

Pyramidology by critics who have advanced their views dogmatically, exhibiting, too, an intolerance for the views of others, ill-suited to the spirit of honest conviction, and is, in fact, one of the most effective methods of bringing a subject into general disfavour.

The following pages, then, are not intended to press any one particular theory or speculation upon the reader, but to place before him what may best be described as a history of the subject, by collecting together between the covers of one volume different data and opinions, gathered from various sources—ancient and modern—and by examining them in the light of the latest research in a candid, but, we trust, logical manner.

That the Great Pyramid has proved itself such a debatable subject all down the ages is no doubt due to the fact that its architect concealed the true object for which he designed it, and he did this so successfully that not even a tradition has come down to us which purports to have originated at the epoch of its construction, such traditions as have survived belonging to much later times.

[Comments or explanations enclosed in square brackets inserted in matter quoted from other authors are the present writer's.]

Hastings,
November, 1935.

B. STEWART.

CHAPTER I

PYRAMIDOLOGISTS: ANCIENT AND MODERN

The fascination of Egypt and its Monuments.

Age-long wonder of the Great Pyramid.

The Theories of Egyptologists.

The Great Pyramid a unique structure.

Zoser's and Seneferu's Pyramids.

Experimental Pyramid-building.

Early Pyramid investigators.

Modern Great Pyramid research.

THE SEVEN WONDERS OF THE WORLD

“The *Pyramids* first, which in Egypt were reared,
Next *Babylon's Gardens* and Ramparts appeared ;
Then *Mausolus's Tomb*, of affection and gilt,
And the *Fane of Diana* in Ephesus built ;
The *Colossus of Rhodes*, built in brass for the Sun,
And *Jupiter's Statue* by Pheidias done ;
Some the *Tower of Pharos* place next, we are told,
Some the *Palace of Cyrus* cemented with gold.”

(*Old Rhyme.*)

HISTORY AND SIGNIFICANCE OF THE GREAT PYRAMID

CHAPTER I

PYRAMIDOLOGISTS: ANCIENT AND MODERN

ALL down the ages Egypt and its monuments—and one monument in particular—have always had a strange and universal fascination for the rest of the world. People talk of the “riddle of the Sphinx,” but the least comprehended of all Egypt’s wonders is still the Great Pyramid. While hardly anything has been written about the Sphinx, whole libraries of books have appeared upon the Pyramids, and particularly upon the Great Pyramid. There is a saying, “All things dread Time, but Time itself dreads the Pyramids,” which, exaggerated though it may be, serves to show the impression these apparently imperishable monuments have made upon the minds of men by their great bulk, strength and permanence.

“Virtue alone,” wrote Edward Young (1684-1765), “outbuilds the Pyramids; her monuments shall last when Egypt’s fall,” and the still earlier Thomas Fuller (1608-1661), has

said, "The Pyramids themselves, dotting with age, have forgotten the names of their founders."

Herodotus, the Greek historian of the fifth century B.C., generally regarded as the father of history, to whom we owe the earliest description extant of the Great Pyramid, says of Egypt: "No country possesses so many wonders and has such a number of works that defy description."

It is not surprising, therefore, that all sorts of legends and theories have, in course of the centuries, grown up round the Great Pyramid, so that even a present-day writer thereon can remark: "It is safe to say that men have been seeking an answer to the riddle [of the Great Pyramid] for nearly 4,000 years, and have so far little to show for the time spent. Countless numbers have been initiated into the 'mysteries,' yet nowhere have we an account of any explanation or answer to the problem in that great building. . . . Numerous writers have sought the Masonic symbolism; astronomers have centred on the astronomical, and see the passages and gallery as giant telescopes; the missing body troubles the tomb-worshippers; while the open tomb seems to solace others." And another modern author dismisses the subject with the remark that "this huge edifice was merely erected for an entirely selfish purpose—the self-glorification of Cheops—both as regards a tomb and an

astrological observatory," an idea first propounded by R. A. Proctor, an astronomer, during the last quarter of the nineteenth century, in an attempt to demolish the thesis of Professor Piazzi Smyth, Astronomer-Royal for Scotland, then recently advanced.

Yet a third investigator, Commander Barber, U.S.N., in his *Mechanical Triumphs of the Ancient Egyptians* (1900), despairs of a solution of the Pyramid ever being found. "The full object," he writes, "of the construction of the Pyramid of Cheops will never be known. After years of discussion of this curious topic, the scientific [Egyptological] world has reached the conclusion that the pyramids were tombs and nothing but tombs." He adds to this, however, "At the same time the extraordinary mathematical properties of the Great Pyramid (whatever we may think of their peculiar application by Piazzi Smyth and others) certainly impresses one with the idea that this pyramid at least was more than a tomb."

It is thus clear that, even to-day, investigators are by no means agreed as to what is the real purpose and significance of the Great Pyramid, opinions ranging from a simple "don't know," to the scepticism which dismisses all theories of any kind as not worth considering, and regards the First of the Seven Wonders of the World as merely a gigantic folly, a monument to the self-glorification of one man.

Such attitude towards the Great Pyramid is well illustrated in the following extract from Arthur Mee's *Wonderful Day*, a journalist known for his many books written for the rising generation—an extract which might not have been written if its author had first pondered the advice of William Penn: “*Neither despise, nor oppose, what thou dost not understand.*” Referring to the Great Pyramid, Mr. Mee says of it: “The Pyramid is one of the most gigantic human follies in the world. . . . The belief that the truth of the beginning and end of the world (*sic*) is in the Pyramid is perhaps the most astonishing nonsense the mind can spend itself on. God does not play such a trick on mankind as to hide a note in a heap of stones.”

We may safely leave the intelligent reader to make his own comment on the foregoing, which is emphasized by being printed in bold type in order to impress the reader as being authoritative. Those, however, in a better position to judge, will know what value to place upon the qualifications displayed by such a critic as a self-appointed exponent of the Great Pyramid.

To disentangle the confusion that still exists respecting the Great Pyramid is a main purpose of this volume, which is intended to replace our earlier work, *The Witness of the Great Pyramid*, now out of print, but dealing with the subject from an historical and

general view-point rather than from that of a particular theory or aspect.

Seeing the fascination that the Great Pyramid has exercised over the minds of men of many nationalities all down the ages, it is probably no exaggeration to assert that more has been written about it in an endeavour to discover its purpose than about any other monument of antiquity. There is no known period, in fact, within historic times, when the Great Pyramid was not famous. Besides Herodotus, already mentioned as having left the earliest account extant of it, Eratosthenes (235 B.C.), Diodorus Siculus (60 B.C.), Strabo and Pliny, all refer to it, while the latter mentions, in addition, twelve other ancient writers who had written upon it. And to come down to modern times, when any rational appreciation of the structure first becomes manifest, Col. Howard Vyse, in the second volume of his *Pyramids of Gizeh*, published in 1837, gives an abridgment of over a hundred authors—Greek, Roman, Arab and European—who have discoursed upon the Great Pyramid. All refer to it as an object of wonder and curiosity, with various speculations, many hardly worth credence, as to its purpose, their one point of agreement, however, being its great antiquity.

The earliest records can tell us practically nothing definite about the Great Pyramid, and the Egyptians themselves are silent upon the

subject, while the explanations of ancient historians, such as Herodotus and Diodorus, are almost entirely conjectural, implying that it was probably *intended* as the tomb of its builder, Khufu, though stating he was eventually buried elsewhere.

This tombic theory of the Great Pyramid is not only one of the oldest of the various theories about it that have been current all down the centuries, but has been the most persistent, and is still clung to by modern Egyptology, presumably because certain *later* pyramids were undoubtedly used for interment. Thus, for example, the *Cambridge Ancient History*, a fairly recent publication, referring to Gizeh and its monuments, says (vol. i, p. 281): "There they [Khufu, Khafra and Menkaura] erected the most magnificent pyramids of all, the mighty three that mark the *culminating point* of this type of *royal grave*."

Of these three pyramids, however—the Great, the Second (or Khafra's), and the Third (Menkaura's)—the last-named *alone* was used as a tomb, since its sarcophagus and wooden coffin, inscribed with the name and titles of Menkaura, have been found in it, and the remains of his mummy. These were despatched by ship to England in 1838, but the ship was wrecked, and the sarcophagus lost. The fragments of the wooden coffin, however, and the mummy were recovered, and are now in the British Museum.

With regard to Khafra's (or the Second) Pyramid, even his name has not been found inscribed on any part of it, and it is very doubtful whether it was ever intended to be his burial place; while as to the Great Pyramid, it was neither intended nor used as a tomb. In fact, its very design, internally, and the methods of construction used to carry it out, definitely prove to anyone conversant with monolithic building on a large scale that such a use was impossible, as has been explained in detail in our previous books on this subject and by other writers thereon.

Seeing also that these three pyramids are the earliest *true* pyramids of any, and are only exceeded in age by, perhaps, three other structures of pyramidal *form*, so that all other pyramids in Egypt were constructed *after* them, the statement quoted above that they "mark the culminating point" of this form of structure—that is, were erected last of all in a long line of evolutionary pyramids—is also erroneous.

It is extraordinary, to our mind, how books dealing with Egyptology (such as that quoted above) frequently display the greatest ignorance upon that one subject—pyramidology—peculiar to Egypt, and especially upon the Great Pyramid, the least understood ancient structure of any on the part of Egyptologists. They invariably, without the slightest hesitation, call it a tomb, the one description the

architect did *not* mean it to fulfil, whatever else he intended it to be. And in constructional details we find the same ignorance and guess-work. Thus, in the *British Museum Guide to the Egyptian Collections* (p. 198), it is stated that the Great Pyramid "was originally covered with *inscribed* slabs of smooth limestone or *polished granite*," an idea apparently borrowed from that very untrustworthy historian, Herodotus,* but for which modern research offers no evidence. None of the existing casing-stones, at the base of the structure, which are of the finest limestone, nor any fragments that have been found, bear any traces whatever of having had hieroglyphic inscriptions on them. A few, however, have what appear to be the scribbles left on them by travellers, just as is done by modern trippers, and such scribbles (*graffiti*) are found all over ancient buildings in Egypt (Petrie).

The idea of these casing-stones being of

* That is, as regards matters relating to Egypt. This is shown by his placing Khufu, Khafra and Menkaura (or Cheops, Chephren and Mycerinus, as he calls them—the Greek forms of their names), kings of the Fourth Dynasty, *after* Rameses III of the Twentieth, some fourteen centuries later—errors arising from his noting down information as he received it from his guide and interpreter in the order in which he visited the different sights of Egypt, very much as the modern tripper does, he having visited the pyramids of Gizeh after seeing the temple of Ptah at Memphis (Professor Sayce, *Egypt of the Hebrews and Herodotus*).

granite is apparently due to the fact that those on the Third Pyramid were of this material, as far as the lower courses were concerned, the upper ones being of limestone, which was used throughout on the First and Second Pyramids: on the latter the upper courses are still *in situ*.

The fact that neither the Great Pyramid, nor the few earlier structures of this form—such as Zoser's Step Pyramid at Sakkara, and Seneferu's two pyramids at Meidoum and Dahshur (the latter also known as the North Stone Pyramid of Dahshur)—were used as tombs, but later pyramids were, shows that the Egyptians of that time did not themselves know what the true significance of the Great Pyramid was, but regarded it as a mausoleum erected to perpetuate the name and memory of its builder. Hence the attempts of later monarchs to copy it as far as they could, and their adoption of this form of burial place. The idea, therefore, still very widely held, that the Great Pyramid is a tomb is one wholly borrowed from much later-constructed pyramids ignorantly copied from it, but with which they have nothing in common except in their external form. By a precisely similar line of argument as that adopted by Egyptologists in applying the tombic theory to the Great Pyramid, the archaeologist of a later age might maintain that St. Paul's Cathedral and Westminster Abbey were not places of worship

because they contained memorials and tombs to kings and other distinguished personages, and that this proved their purpose was for burial.

That the Great Pyramid was erected for some purpose different to that of any other structure in Egypt is proved by its unique system of passages and chambers. There is no earlier—nor even any later—structure remotely resembling it; neither is there any structure, nor series of such, indicating any evolutionary progress towards this form of building. Before the Great Pyramid came into existence its peculiar internal construction was unknown; after it no attempt was made to repeat it.

Reference is sometimes made to Zoser's and Seneferu's pyramids (both monarchs of the Third Dynasty, Khufu being the first king of the Fourth Dynasty), mentioned above, as representing evolutionary steps in pyramid construction, which found their highest expression in the Great Pyramid, which is therefore not such a unique structure as many claim for it, and not such an entirely new departure in monolithic building.

As pointed out, however, in our smaller work on the Great Pyramid (fourth edition, pp. 5-8*), these earlier pyramids were for the

* *The Great Pyramid: Its Construction, Symbolism, and Chronology* (Covenant Publishing Co. Ltd.).

purpose of training the Egyptian workmen towards attaining the necessary skill in huge monolithic construction, and constituted a period of experimental work—*only experimental, however, as regards certain structural details, NOT as regards the arrangement of passages and chambers*; that is, not as regards the *design* internally. For it is in this respect in particular that the Great Pyramid is unique.

“The Revelation of the Design for the Great Pyramid was given centuries before the Design was conveyed to Egypt, which [conveyance] was at least a century before any experimental pyramid-building was undertaken in Egypt. The Design revealed only the units and dimensions of the external form of the Great Pyramid, and the lay-out of the Passages and Chambers therein. It did not reveal the *engineering* details of construction whereby the structure was to be built as an enduring monument, nor did it reveal the method by which the structure was to be raised course by course. These had to be ascertained by laborious experimental efforts.”—Davidson in *The Great Pyramid's Prophecy concerning the British Empire and the U.S.A.* (p. 10).

Agreeable to this we find, as might be expected, that the first experimental work was undertaken upon two structures already erected—Zoser's (so-called) Step Pyramid at

Sakkara, originally an oblong *mastaba*, or tomb with sloping sides, being the first to be converted into the *form* of a pyramid by the addition of successive layers of masonry enclosing the original structure.

Further external masonry work was carried out on Seneferu's *mastaba* at Meidoum, sometimes called the False Pyramid of Meidoum, and shows larger and better worked blocks, and finer joints, indicating the attainment of greater skill. This outer casing gave it a face-angle of $51^{\circ} 52'$, almost identical with the angle of the Great Pyramid—another step in experimental construction.

Following this came Seneferu's Great Stone Pyramid of Dahshur (built simultaneously with the enlargements to his Meidoum pyramid), also known as the North Stone Pyramid of Dahshur to distinguish it from a second one, the South Stone—or Blunted Pyramid (from its steeper angle on the upper half of the structure, giving it a peculiar shape).

This North Stone Pyramid shows still better workmanship, and nearly approaches the standard found in the Great Pyramid, and is almost equal in size to the Second Pyramid of Gizeh. It contains chambers in the structure itself, like the Great Pyramid, but at ground level, instead of high up as in the latter, and these are roofed in by successive overlappings of stone precisely as the Grand Gallery of Khufu's pyramid is, showing that in Seneferu's

Dahshur Pyramid the workmen were now sufficiently skilled to undertake experimental work on interior constructional details.

Strictly speaking, therefore, this Dahshur Pyramid is the earliest *true stone-constructed* pyramid in existence, but its *design* is due to the Great Pyramid, since the plans of the latter were in existence before its construction commenced. It is, therefore, perfectly justifiable to claim that the Great Pyramid is the first true pyramid of any. This is confirmed by the tradition which attributes the plans of the Great Pyramid to Iemhotep, a national hero under King Zoser, afterwards deified for his skill as an architect. Hence the preliminary experimental work carried out on Zoser's *mastaba* at Sakkara, and continued during the reign of Seneferu.

"Egyptian building construction in stone had its actual beginning a century before the construction of the Great Pyramid was commenced, and within the last twenty years of the Second Dynasty. The first known examples were clearly in the nature of experiments in stone construction. . . . The experimental stage of monolithic building lasted for roughly half a century, and was succeeded by another half-century of experiments in ascertaining the best means of correlating the various experiences thus gained to evolve a type of pyramid that would endure through the ages. The supreme achievement

was the Great Pyramid, built from the accumulated experience in building-construction gained in the century preceding its founding.” —Davidson in the *Structural Engineer*, July, 1929.

It cannot, however, be said the Great Pyramid is a product of evolution. To incorporate the deep mathematical, geometrical and astronomical knowledge revealed in its construction, particularly when we take into account the simple form adopted—a four-sided, triangular-faced structure—in the geometrical lines of such a vast building, by any process of trial and error, would have been of so extensive and prolonged a nature, that many generations of builders and hundreds of pyramids would hardly have sufficed to discover it. The few structures of a similar nature preceding it were merely training-grounds for the workmen. This scientific knowledge, combined with the extreme accuracy of its construction, proves that the whole of the Great Pyramid was the result of previous design, planned and thought-out by a master-architect before a single stone had been placed in position.

The problem of the Great Pyramid has been well expressed in the following words of the late Marsham Adams, the Oxford scholar, from his *House of the Hidden Places* (pp. 34-35) :—

"It is absolutely unique. No other building, it may be safely averred, contains any structure bearing the least resemblance to the upper chambers. Striking as it is in every feature, the most remarkable circumstance of all is the evident intention of the architect to preserve that secrecy which lends a majesty to the strange theosophy of Egypt. What then was the design, the secret and jealously guarded design, with which this wondrous edifice was constructed? That its various features are meaningless, or the mere result of caprice, is a suggestion to which the forethought and lavishness of calculation displayed in every detail unmistakably gives the lie. Nor again can we maintain that they are necessary for the purposes of an ordinary tomb. For, in the first place, they are not to be found in other pyramids which were used for that purpose; and secondly, if there be any intention which the architect has openly manifested, it is to create such a series of obstructions that no human body could possibly be buried therein."

To find an answer to the above question: "What was the jealously-guarded secret of this wondrous structure?" is one of the purposes of these pages, but it will be of interest to give, as an introduction thereto, a summary of the investigations that have been made to probe this secret.

All allusions to the subject prior to the

seventeenth century are almost entirely conjectural and based on myths and legends of earlier writers, mostly of Mohammedan origin. "The only fact which seems to be established," Colonel Howard Vyse (see below) has written, "by the Eastern authors (Arabians) to whom we have referred, is the opening of the Great Pyramid by Al Mamoun [c. A.D. 820], and even of that no distinct or rational account exists." And Professor Smyth, after him, says: "We find ourselves standing again just where Professor Greaves stood in 1637, obliged to reject the testimony from the followers of the false prophet."

The foregoing John Greaves, then Savilian Professor of Astronomy at Oxford, was the earliest investigator to give any really scientific data of the Great Pyramid. He visited Egypt in 1637 in order to explore thoroughly its pyramids, and in particular the Pyramid of Khufu, afterwards publishing his investigations under the title, *Pyramidographia: A Description of the Pyramids in Egypt* (1646). His work gave a great stimulus to other investigators, and he was soon followed by English, French, German, Dutch, and Italian explorers. The late Dr. Joseph A. Seiss, in his *Miracle in Stone* (14th edition, p. 29), published in Philadelphia, gives a list of twenty names of the more prominent investigators between 1647 and 1761.

The next important contribution to the

subject was that made by Nathaniel Davison, British Consul at Algiers in 1763. When residing in Egypt he frequently explored the Great Pyramid, and was the first to discover the lowest of the series of five spaces (called "Construction Chambers") over the King's Chamber, which is often referred to as "Davison's Chamber" for this reason.

Following Davison, there was the important survey of the Great and other pyramids at Gizeh carried out by the French *savants* who accompanied Napoleon to Egypt in 1799. They were the first to survey the site trigonometrically, and to discover two of the corner sockets at the base. They carried out other detailed measurements of the Great Pyramid and its site, afterwards published in monumental form.

It was, however, Colonel Howard Vyse who, in 1837, at the expense of a large fortune, and after seven months' work, with over a hundred assistants, brought the Great Pyramid within the sphere of modern scientific investigation, thereby laying the foundations upon which Sir John Herschel and Professor Piazzzi Smyth laboured, and from whom, in turn, the later researches of Sir Flinders Petrie and others, down to the present, were developed.*

Colonel Vyse re-opened the forced entry

* Vyse's work is incorporated in his *Operations at the Pyramids of Gizeh* (London, 3 vols.), 1840-42.

made originally by Al Mamoun early in the ninth century, A.D., rediscovered the corner-sockets previously uncovered by the French in 1799, discovered and opened up the ventilating chambers to the King's Chamber, and also the four other chambers over Davison's Chamber.

It was while engaged on this last discovery that Colonel Vyse came across the cartouches of Khufu and his brother Khafra, as co-regent with him, in the form of mason's marks, painted in red ochre—sometimes inverted—on the ceiling-beams of the King's Chamber, thus proving they were not added *after* the beams were in position, and thereby confirming the tradition ascribing the Great Pyramid to Khufu (though not necessarily its actual architect), and—what is of more importance—at the same time proving it was built and *completed within his reign*, and could not consequently have been intended for his tomb, since access to the King's Chamber was no longer possible once it had been roofed in, the passages leading to it being blocked by the granite plug at the foot of the first Ascending Passage, which was *built into position* during construction.

Present-day study of the Great Pyramid may be said to date from the publication, in 1859, of Mr. John Taylor's volume, *The Great Pyramid: Why was it built?* Mr. Taylor was the first to realize that the Great Pyramid

embodied certain scientific facts which proclaimed that, while *in* Egypt, it was emphatically not *of* Egypt. Earlier investigators had suggested that certain scientific elements were probably incorporated in its structure, and that its base measurements were an intended representation of the number of days in a year. The great advance, however, made by Mr. Taylor upon this idea was due to his study of astronomy and mathematics, in conjunction with a study of the Bible.

It was to test Taylor's conclusions that Piazzi Smyth, then Astronomer-Royal for Scotland, made his survey of the Great Pyramid during the winter of 1864-65, the results of which appeared in his *Life and Work at the Great Pyramid* (3 vols., Edinburgh, 1867), now very difficult to obtain. His smaller book, however, *Our Inheritance in the Great Pyramid*, which has gone through several editions, itself running to nearly 700 pages, contains ample details of his investigations for the average Pyramid student, and is not very difficult to obtain. He also published a sequel to his *Life and Work* entitled, *On the Antiquity of Intellectual Man* (1868). Smyth's investigations produced a flood of books and pamphlets on the Pyramid, based on his deductions, during the last quarter of the nineteenth century.

Of these, perhaps, the best and most useful was the *Miracle in Stone* by an eminent

American divine, Joseph A. Seiss, already referred to above, which did for American Pyramidologists what Smyth's *Our Inheritance* served in this country. It popularized the study of the Great Pyramid in America (proved by its rapidly going into fourteen editions) at a time when publications on the subject in that continent were very limited, and confined to tracts, short papers, and review articles.

It will be interesting at this point to quote an extract from Dr. Seiss's *Preface*, written sixty years ago, as showing how rapidly a study of the Great Pyramid spread, following the publication of Smyth's scientific investigations, at a time, too, when its true significance was only beginning to dawn upon the world. He says:—

“If the half that learned and scientific investigators allege respecting the Great Pyramid of Gizeh be true, it is one of the most interesting objects on earth, and ought to command universal attention. It has been unhesitatingly pronounced, and perhaps it is, ‘the most important discovery made in our day and generation.’

“Simply as an architectural achievement, this mysterious pillar, from the time of Alexander the Great, has held its place at the head of ‘The Seven Wonders of the World.’* But, under the researches of

*The Great Pyramid; the Colossus of Rhodes; Hanging Gardens of Babylon; Temple of Diana at

mathematicians, astronomers, and others, it has of late been made to assume a character vastly more remarkable. Facts and coincidences so numerous and extraordinary have been evolved, that some of the most sober and philosophic minds have been startled by them. It would verily seem as if it were about to prove itself a symbol of the profoundest truths of science and religion, and of all the past and future history of man. So at least many competent persons have been led to regard it, after the most thorough sifting which the appliances of modern science and intelligence have been able to give it."

In confirmation of the foregoing, Dr. Seiss then goes on to quote from another contemporary investigator, Mr. St. John Vincent Day, of the Philosophical Society of Glasgow, and other learned institutions, from his *Papers on the Great Pyramid* (1870):—

"A former published work on the subject, besides papers in the Transactions of a Scientific Society, have brought me into contact with every shade of opinion as to the various theories respecting the [Great] Pyramid, and the facts belonging to it. I have thus been enabled, both by verbal and

Ephesus; Statue of Jupiter Olympus by Pheidias at Athens; the Mausoleum of Artemisia, erected by her to her husband Mausolus, King of Caria, at Halicarnassus; the Pharos (Lighthouse) of Alexandria erected by Ptolemy the Second.

written discussions and arguments, to ascertain the weight of evidence on which theories, assertions, contradictions, and alleged facts have been supported; and I can only state that in those cases where the Pyramid subject has been examined into with a diligent spirit of enquiry, that is, with the aim of not merely strengthening preconceived notions or prejudices, but to evolve absolute realities, I have not yet met anyone but who is more or less convinced by the modern theory."

Coming now to the present century, the next contribution to Great Pyramid literature was the late Col. J. Garnier's *Great Pyramid: Its Builder and its Prophecy*, published in 1905. He identified its first Low Passage as symbolizing a time of trial and unrest, giving its date in his 2nd edition (1912) as beginning "about 1914," and expecting it to be marked by an invasion of Britain by Germany. He did not, however, recognize any chronology beyond this date, nor say how long this period of trial might last. Unfortunately he belonged to the futurist school of prophecy interpretation, a fact which vitiated many of his conclusions respecting Scripture prophecy as applied to recent history.

To Taylor and Piazzzi Smyth thus belongs the credit of being the first investigators to make any serious attack upon the orthodox tombic theory held by Egyptologists, though

in this connection it is interesting to note that Sir Gardner Wilkinson, himself a distinguished Egyptologist, as far back as the eighteen-forties, was one of the first to cast doubts upon this theory as applied to the Great Pyramid, in those days practically the only one held about it.

Smyth's conclusions have been confirmed by the later researches of Sir Flinders Petrie, though the latter himself, from an incomplete application of his own survey, rejected the thesis of Smyth. Yet nothing more completely confirms the true purpose of the Great Pyramid than the wealth of detail which Petrie's very accurate survey supplies, the nature of which, considering the difficult work of accurate triangulation of the Pyramid area, no one but an engineer or architect can properly appreciate, to say nothing of the difficulties encountered in the passages and chambers of the Pyramid itself.

This survey, the most extensive and accurate to be undertaken, formed the basis of the researches of the late Dr. Aldersmith and his collaborator, Mr. David Davidson, whose conclusions are embodied in a large quarto volume, *The Great Pyramid: Its Divine Message*, first published in 1924 (4th edition, 1928). This work, however, is highly technical, and is more particularly addressed to the scientist and mathematician, and is the leading scientific treatise on the subject.

Next to the foregoing, the most notable work was the present writer's *Witness of the Great Pyramid*, first published in quarto form in 1927 (2nd edition, 1928, demy 8vo), the outcome of several years' independent research, which led him to similar conclusions as Messrs. Davidson and Aldersmith, but along somewhat simpler lines. This volume did a great deal towards popularizing a study of the Great Pyramid, since it expressed the science and technicalities involved (such as had hitherto restricted its study to those conversant therewith) in language understood by the intelligent layman, and thereby enabled many to become students of the subject who otherwise would have found it too abstruse.

He also published, in 1929, another important volume, *The Mystery of the Great Pyramid*, dealing with the subject from a different viewpoint to any of the foregoing, namely the close connection existing between the Great Pyramid and the Egyptian "Book of the Dead," a connection first noticed by the late Marsham Adams, some forty years ago.

CHAPTER II

GEOMETRY IN STONE

Geometry the basis of the Great Pyramid.
The Great Pyramid a constructional wonder.
Geometry and mathematics the most ancient sciences.
Use of geometry in modern engineering.
The Pyramid an engineer's problem.
Modern surveys of the Pyramid.
Recessing of the Core-masonry.
The missing Top-stone and Number of Courses.
The " Year-Circle " in the Pyramid.
The Rhind Mathematical Papyrus.
Egyptian mathematical and astronomical knowledge.
Nature of the Egyptian " wisdom " of Moses.
Modern analogies to the construction of the Pyramid.
Note on the Sphinx and Zodiac of Esneh.
ADDENDUM—Geometry of the Great Pyramid.

“I have heard it said that, in the neighbourhood of Naucratis, a town of Egypt, there existed one of the most ancient gods of this country, named Thoth, who invented the numbers, cyphering, geometry, astronomy, the games of chess and dice, and writing.”—PLATO.

CHAPTER II

GEOMETRY IN STONE

PROPERLY to understand the Great Pyramid, it must first be appreciated that the whole structure, internally and externally, is geometrical in conception and design, and that geometry is its sole basis, from which the ideal structure can be developed. It is fairly obvious to the unbiassed mind that, after facing the elements for something like 4,500 years, at a moderate estimate, being subjected to seismic disturbances, damage from encroaching wind-blown sand, and, in particular, the vandalism of man, which has stripped off its protecting layer of casing stones and mutilated it inside, that the structure as it faces us to-day is *not* as it left the builders' hands. As Mr. Riffert has remarked: "A dual description of the Pyramid, as it *is* and *was*, is therefore necessary."

The builder of the Pyramid was faced with a task not only gigantic in its structural proportions—its base covers an area of 13 acres, practically the area of Lincoln's Inn Fields in London, and it is over 100 ft. higher than St. Paul's Cathedral—but extremely difficult in

the exactness of the linear and angular dimensions to be embodied in it. All this, too, had to be carried out in stones weighing many tons each, and in measurements running into thousands of inches in the aggregate (the Ascending Passage and Grand Gallery together equal over 3,350 inches in length). And when sceptics find that some measurement does not *precisely* conform to the theoretical geometrical one—and refusing to take into account the foregoing considerations, viz., that the Pyramid *to-day* is *not* as the builder left it—upon which some fact is based, they immediately pass the verdict “Not proven,” yet seem prepared to make any assumptions necessary to uphold *their* particular theories.

The plain fact is that we, to-day, with all our modern engineering appliances and resources, and putting aside the question of cost, would probably find the building of the Great Pyramid to the specification laid down in its geometrical plan beyond us. The master builders who did actually raise the Great Pyramid undertook, and carried through, an achievement which surpasses in every way any other similar undertaking of man. It is, in fact, a standing rebuke to our modern scientific precocity and conceit. It constitutes a geometrical representation, on a vast scale, of the scientific knowledge, mathematical and astronomical, of a former civilization, which preceded all other known civilizations, but has

now long since passed away. The remarkable manner in which this knowledge is not only geometrically expressed by the relationship of certain simple mathematical formulæ, but also combines in the figure of a pyramid all the known facts regarding the earth and its orbit, suggests a wisdom more than human.

That the Great Pyramid was raised as an imperishable monument to the geometrical and mathematical science of a former civilization is corroborated by Sir Flinders Petrie, who remarks: "The artistic motive was clearly a love of the geometrical idea. The geometrical properties united by the form chosen are beyond a casual chance, and clearly point to a great appreciation and study of geometry."

Mathematics and geometry, together with the sister-science of astronomy, are the oldest sciences of any, and were brought to a very advanced state by the Chinese and other ancient peoples. John Ruskin has pointed out that a knowledge of geometry was a necessity to early man, and was probably developed before either reading or writing. The world's earliest records, also, from the pyramids of Gizeh, Druidical remains such as Stonehenge and Avebury, the *teocalli* or pyramids of Mexico, and similar structures, are all geometrical in their inception; while the high development to which the science

was brought 4,500 years ago is proved by the construction of the Great Pyramid, the only monument that has carried over from pre-deluge times the high scientific achievements of the original Adamic civilization destroyed at the Flood.

Proof of the antiquity also of arithmetic is borne out by the following remarks of the late Professor Max Müller :—

“ In every language of the Aryan race all the numerals are the same. But think what this means. The decimal system must have been elaborated and accepted by the ancestors of our race before they separated, and every number, from one to one hundred, must have received its name ; and all these names must have been sanctioned, not by agreement, but by use, or, if you like, by the survival of the fittest. How old these numerals are is best shown by the fact that they cannot be derived from any of the roots known to us, so that we cannot tell why six was ever called six, or seven seven. Yet in Sanskrit, Zend, Armenian, Greek, Latin, Slavonic, Celtic and English we find exactly the same series of numerals.”

“ There be seven liberal sciences,” says an ancient treatise on Masonry (*The Legend of the Craft*)—“ Grammar, Rhetoric, Dialectic, Arithmetic, Geometry, Music, and Astronomy. These be the seven liberal sciences, the which be all founded by one science, that is to say

Geometry ; for Geometry teacheth a man mett and measure, ponderation and weight, of all manner of things on earth, for there is no man that worketh any science, but worketh by some mett or measure, nor no man that buyeth or selleth, but he buyeth or selleth by some measure or by some weight, and all these is *Geometry*."

" It was said in years back by Egyptians and Greeks that 'God ever geometrizes' ; and perhaps the Pythagorean inscription over the academy doorway recommending those to refrain from entering for professional study of Theology who knew no geometry, might more often be more deeply considered. For geometry was, and perhaps still is, but the alphabet and representative of science, since science is but a mode of segregating individualities, and assessing relativities for the purpose of a larger conception. Theology being but a study of the relationships existing between the Absolute, Man, and Nature, is but a unification of the sciences"—*The Great Pyramid of Gizeh*, by Francis W. Chapman.

Few people, not conversant with geometry, recognize the great usefulness of geometrical reasoning, or realize how much it enters, under the name of "graphic statics," into modern technical, and particularly engineering, investigations. For this reason the problem of the Great Pyramid is essentially one to be

solved, *not* by the Egyptologist as such, *but by the engineer*, since it has been erected on principles which can only be appreciated and understood by the constructional engineer.

A knowledge of geometry and mathematics, therefore, *combined with an understanding of their proper application*, is essential to a correct understanding of the Great Pyramid and its purpose. That various theories and interpretations have been read into its structure, even by those perhaps recognizing its geometrical basis, is simply because their exponents have not appreciated this fundamental fact. It also refutes the idea, often expressed to the writer, that a person who has actually visited the Great Pyramid, and perhaps made some measurements and observations of it, is better qualified to explain it and the purpose for which it was erected than another who had not seen it, though the latter, on the other hand, might, by profession and experience, such as the civil engineer can lay claim to, actually be the better qualified of the two. For the civil engineer makes use of geometry and its practical application on precisely the same principles as those which the architect of the Great Pyramid has done.

Merely exploring the structure will reveal nothing as regards its true purpose. One must have it before one as a cross-sectional scale diagram shows it, like any other working drawings of a large constructional under-

taking. Everything the investigator requires is given by the scientific survey of the Great Pyramid such as Piazzzi Smyth and Sir Flinders Petrie have so painstakingly carried out, particularly the latter, since their results confirm the theoretical geometrical figure which defines the ideal structure wherein all the scientific and mathematical features are embodied. *True results, therefore, are not to be obtained by actual measuring of the building, but by the mathematically calculated data given by its geometry*, though a scientifically carried out survey proves that this data has been amazingly well embodied in the actual structure, in spite of some distortion in it brought about by subsidence in the masonry and other destructive agencies.

Mention should also be made of the more recent survey carried out for the Egyptian Government during the winter of 1925-26, by Mr. J. H. Cole, B.A., F.R.G.S.* which has settled certain controversial points, such as the recessing of the casing stones at the centre to conform to the outline of the core masonry behind them. This survey has shown they were not so recessed, but were straight, from corner to corner, as shown by Petrie's reconstruction, with the result that they were

* *Survey of Egypt, Paper No. 39. Determination of the Exact Size and Orientation of the Great Pyramid of Giza* (Government Publications Office, Cairo), 1926.

gradually reduced in thickness from the centre of the base towards the corners, where they were only half the central thickness. Each successively ascending course of casing-stones was thus built unhollowed and of *varying* thickness.

The recessing of the core-masonry, however—the structure as we see it to-day—is very clearly shown in a remarkable air-photograph by Brigadier-General Groves, C.B., D.S.O., reproduced by Mr. Davidson in the *Structural Engineer* for March, 1930, indicated by a shallow V-shaped depression on the south slope of the pyramid, a depression with a maximum depth horizontally of but 3 feet. Owing to this shallowness of the recessing, only one particular position of shadow, just grazing the slope of the corners, can reveal on an air-photograph this unique feature, and it is indeed remarkable that General Groves should have been able to take this photograph just at this critical moment and under ideal conditions of lighting before sunset, thereby settling a controversy of long standing, and *definitely revealing a structural feature of the Great Pyramid that is a key to the understanding of its significance and interpretation, but had been previously unobserved for over 4,000 years.* Both the Second and Third Pyramids are also shown in the above photograph, but there is not the slightest indication on either of any depression on their south

slopes such as occurs on the slopes of the Great Pyramid.

To Mr. Davidson belongs the credit of being the first to infer that the Great Pyramid did incorporate this unique characteristic (refer his *Great Pyramid: Its Divine Message*, first published July, 1924), an inference gathered from Sir Flinders Petrie's survey, though the latter, apparently, only recognized this hollowing-in of the core-masonry at the base, and did not extend it to the existing summit.

The reason, of course, that this hollowed groove down the centre of each side of the core-masonry had not been observed all these past centuries is because, being so small in proportion to the vast structure wherein it is incorporated (a *maximum* of 36 in. in a total length of base of over 750 ft.), it is quite imperceptible to the unaided eye, and only modern refinements of surveying with very accurate and precise instruments of observation—combined with the ability to take photographs from the air—have made it possible to detect it.

The above Egyptian Government survey has also confirmed the present writer's previous deduction respecting the missing top-stone of the Great Pyramid, to the effect that it was never placed in position, and the Great Pyramid had always shown a truncated summit. Diodorus, too, tells us that, in his day, when the Pyramid stood with its casing stones

in position, and long before their spoliation began, the structure was "complete and without the least decay," *and yet lacked its apex stone*. Since, however, the top-stone could not have been dismantled without first demolishing the smooth casing-stones, so that the core-masonry formed steps of approach to it, this statement of Diodorus proves the top-stone had never been added to the structure.*

Owing to the fact that early investigators such as Greaves (1637), Pococke (1743), and others, give the number of courses greater than they are to-day, and the summit as smaller than it is now (Sir Flinders Petrie gives it about 36 ft. square), a recent writer on the Great Pyramid remarks†:—

"This makes it *quite certain* that some of the courses have been removed since the

* James Bonwick, author of *Pyramid Facts and Fancies* (1877), quotes a Dr. Richardson [but unfortunately not giving the date of this writer, though presumably early part of last century] as saying:—

"Arrived at the summit we found it . . . a square, from 25 to 30 ft. a side, consisting of long square blocks of stone, with the upper surface coarse and uneven, as are the usual surfaces of stones in the courses of a building. We perceived a thin cement between the different courses of stones, but there was no appearance of any cement having been placed upon the upper surface of the highest course. *The conclusion was that it had never been higher.*"

† *The Great Pyramid in Fact and in Theory*, by William Kingsland, M.I.E.E., 2 vols. (Rider and Co.), 1935.

time of Greaves and Pococke, *and altogether upsets the theory of some writers that the Pyramid was never carried any higher than its present level*, and had no final apex-stone. Seeing that the Second and Third Pyramids were both carried to an apex, there is little room for doubt that this was the case also with the Great Pyramid " (Vol. II, p. 15) [our emphasis].

The intelligent, and unbiased, reader will, however, see the weakness of the foregoing argument, not improved by the dogmatic manner in which it is advanced.

Hardly any two of these earlier investigators, however, of the seventeenth and eighteenth centuries, agree as to the number of courses, which they vary from 260 to 202, showing that they are merely rough estimates, based on the conjectures of others, and are not due to direct observation.

It is therefore illogical, to say the least, that anything "quite certain" can be deduced from such figures, or that they prove the Great Pyramid originally terminated in an apex-stone—on the contrary, they prove no such thing. And the argument in support thereof drawn from the Second and Third Pyramids is just as weak and unconvincing as the similar analogy drawn from other pyramids in support of the tombic theory as applied to the Great Pyramid. The clear evidence of Diodorus (quoted above) that

the Great Pyramid was perfect in his day, yet lacked its apex-stone, is conveniently passed over by Mr. Kingsland.*

While it is quite *possible*, though by no means certain, that *perhaps* its present platform extended one or two courses higher than it does now, the most one could infer is that such might have been intended to act as a key to the top-stone, and bond into it, since such upper tiers are always described as incomplete (Mr. Edgar notes that there are, to-day, still a few odd stones of two courses—the 202nd and 203rd—remaining above the present platform on the 201st course). While this might indicate an *intention* on the part of the builders to add a top-stone, it is absurd to regard it, as Mr. Kingsland does, as positive proof that the Great Pyramid at one time was finished with its apex. For the *fact* remains that, whatever may have been the intention of the builders in this respect, the available evidence supplied by the most recent survey confirms the definite statement of Diodorus and others that it was completed *without* one. As pointed out in our *Mystery of the Great Pyramid*, this is confirmed in the allegorical pyramid described in the ancient Egyptian “Book of the Dead,” of which the Great Pyramid is the structural counterpart.

“From the remotest periods of authentic

* He quotes, however, another reference to Diodorus, but without comment.

history, an atmosphere of mystery has enshrouded all expression of thought and opinion concerning the Pyramids of Gizeh. Essentially geometrical in form, the Pyramids, by influencing the expression of theological conceptions, supplied religious allegory with an unfailing source of geometrical symbolism. It is this pyramid allegory of which a corrupt survival exists in the Egyptian 'Book of the Dead.'"—(*Great Pyramid: Its Divine Message*, p. 89). In other words, as stated by the distinguished Egyptologist, the late Sir Gaston Maspero, Director-General of Antiquities in Egypt: "The Great Pyramid and the 'Book of the Dead' reproduce the same original, the one in words, the other in stone."

Had, therefore, the Great Pyramid fallen into ruins such as many of the pyramids of Egypt exhibit to-day, some little more than shapeless mounds, a knowledge of its details would still have been possible. "Ancient Egyptian texts," writes Mr. Davidson (No. 1 of his *Talks on the Great Pyramid*), "give us all the principal measurements of the exterior and interior of the Great Pyramid, and define the unit of measurement. . . . The measurements thus given are in all cases simple geometrical functions of the year-circle, the latter being a circle whose circumference in Pyramid inches is one hundred times the number of days in the solar year. The form, arrangement, and details of the Pyramid's

exterior, and of its Passages and Chambers, can therefore be built up entirely from the geometry of the year-circle. Reduction of the resulting dimensions to British inches, gives us the identical measurements obtained by the survey of Sir Flinders Petrie."

The Great Pyramid was thus built to monumentalize the geometry of the circle, thereby introducing the incommensurable factor denoting the relationship between diameter and circumference, expressed usually as 3.14159, but can be carried to hundreds of decimals without reaching finality. This basis of the year-circle was utilized to represent the number of days in the year (another incommensurable number), and all the other orbital values of the earth—its distance from the sun, the value of precession, and other astronomical data.

These facts imply the possession of a knowledge of mathematics, geometry, and astronomy—combined with an ability to express them in structural form—far in advance of contemporary knowledge of that time as far as any records we have can tell us. There are even no known Egyptian treatises on mathematics, except the Rhind Mathematical Papyrus, which, however, is only a collection of rules for calculating accounts, a kind of handbook for the training of scribes (Petrie). In this connection the following statement of Diodorus is of interest here:—

“They [the ancient Egyptians] applied themselves much to the study of geometry and arithmetic. The Nile, which annually changed the aspect of the country, gave rise to numerous law-suits amongst neighbours with regard to the boundaries of their possessions. The law-suits would have been interminable without the intervention of the science of geometry; their arithmetic was useful in the administration of private affairs and in geometrical speculations.”
—Cited from *Egyptian Science*, by V. E. Johnson, M.A.

Tātian, a Christian writer of the second century, attributed the invention of geometry to the Egyptians. Diogenes Laërtius credited them with the invention of astronomy, geometry and arithmetic; Strabo, Herodotus, Aristotle, and other ancient writers, all assign the origin of geometry to the ancient Egyptians. These, and other statements of a similar nature by classical writers, have tended to confer on the ancient Egyptians a reputation which, high as it is, is hardly borne out by modern research, and this reputation is largely due to achievements carried out under foreign tutelage, particularly under the heading of Engineering and Construction.

The Rhind Mathematical Papyrus—so-called from being included in the Rhind collection of the British Museum—was originally compiled in the reign of a Hyksos King,

Apepa I, from a much older work by a certain Ahmes, and is a treatise on arithmetic, geometry, and trigonometry. It represents the highest attainments of the ancient Egyptians in these sciences, as is proved by two facts—firstly, no improvement was made in ancient Egyptian arithmetical symbolism; and, secondly, the Greeks did not derive directly from the Egyptians any more arithmetical learning than is contained in this papyrus.

The value of π (ratio of circumference of a circle to its diameter) is given as $(\frac{16}{9})^2$ or 3.1604, an approximation only, though a fairly close one. Yet we find this factor defined in the Great Pyramid with an accuracy only reached in modern times.

In the few trigonometrical examples, all, except one, deal with the problem of finding the slope of a pyramid's face—the angle ABC in diagram at p. 62—and it is curious to note that the values worked out correspond to angles of $53^\circ 44' 7''$ and $51^\circ 16' 40''$, which closely correspond to the slopes of the Great, Second, and Third Pyramids of Gizeh— $51^\circ 51' 14.3''$; $53^\circ 10' 0''$; $51^\circ 10' 30''$, respectively. This fact strongly suggests that the *original* from which Ahmes made his papyrus had been written *prior* to the Great Pyramid era.*

* The foregoing is based on a description of the Rhind Mathematical Papyrus given in an interesting work entitled *Egyptian Science*, by V. E. Johnson, B.A., published about 1892, which gives examples of the problems described in it.

The geometrical problems are such as calculating the areas of the square, oblong, isosceles triangle (triangle with two equal sides), the isosceles parallel trapezium (a four-sided plane figure, with two sides parallel and the other two not—a truncated isosceles triangle), and the trapezoid (four-sided plane figure of which no two sides are parallel). Small errors, however, are made in calculating the area of the isosceles triangle and trapezium, owing to the use of approximate methods to avoid difficulties in calculation.

In this connection the following extract from Professor Breasted's *History of Egypt* is of interest :—

“ They [the ancient Egyptians] had much practical acquaintance with astronomy, developed out of that knowledge which enabled their ancestors to introduce a rational calendar nearly thirteen centuries before the rise of the Old Kingdom. They had already mapped the heavens, identified the more prominent fixed stars, and developed a system of observation with instruments sufficiently accurate to determine the position of the stars for practical purposes. . . In mathematics all the ordinary arithmetical processes were demanded in the daily transaction of business and government, and had long since come into common use amongst the scribes. In geometry they were able to master the simpler problems, though the area of a trapezoid caused some difficul-

ties and errors, while the area of a circle had been determined with fair accuracy."

Though Egyptian knowledge of mathematics and kindred sciences never seems to have been advanced more than sufficient for ordinary every-day routine uses, and never partook of the nature of "higher" mathematics, yet in later times, in the Ptolemaic period, it seems even to have retrograded.

The author of *Egyptian Science* mentions the interesting fact that "the temple of Horus at Edfu, in Upper Egypt, bears inscriptions describing lands which formed the endowment of the priestly college attached to the temple. These lands were given by Ptolemy XI [died 87 B.C.], but the geometrical descriptions of them, made 200 years since Euclid died, not only do not show a more advanced state of geometrical learning than the ancient Egyptians possessed in the time of Ahmes, but would cause even Ahmes himself to blush. Ahmes uses the incorrect formula for the area of an isosceles triangle, and also for that of an isosceles-parallel-trapezium. The inscriptions on the temple of Edfu retain both these, and use the second for finding areas of trapezia of every kind, no matter how irregular. The dulness or carelessness of this proceeding is monumental in more senses than one."

"Such is an account of geometry as prac-

tised amongst the ancient Egyptians: the further we go back in their history the more geometry they appear to know. The reason, we think, is not difficult to find. Geometry, arithmetic, land surveying, &c., along with writing, medicine, and the other useful arts, were the monopoly of the priestly caste, who were the slaves of tradition, and who, in their obstinate and ignorant conservatism, appear to have been afraid to alter the rules or extend the knowledge of their craft."

"Concerning the art of medicine as practised among them, Diodorus states that, even in his time, the Egyptian doctors used only the recipes and prescriptions contained in the most ancient sacred books, lest they should be accused of murder or manslaughter in case the patient died. The science of geometry appears, unfortunately, to have been treated with a like timidity. The [later] Egyptians, however, of the Alexandrian School, educated in Greek learning, made some important additions to Greek mathematics, and it is to the Egyptians of this school to whom we are indebted for our present sciences of trigonometry and algebra."

As regards astronomical science, the ancient Egyptians knew but one year—the solar—and that only approximately. The geometry of the Great Pyramid defines all three years—solar, siderial and orbital—with an exactness only arrived at in modern times.

What did man know, 4,500 years ago, about the earth, its size, its shape, its orbit, its relation to the sun, or about the sciences of geometry and mathematics? Almost nothing. Even as late as the seventeenth century, modern times we might almost call it, Galileo was sentenced to death for asserting the earth went round the sun, while for 1,400 years the "Almagest" of Ptolemy, the Egyptian-Greek astronomer of the second century A.D., which held that the earth was stationary, and the sun, moon, planets and stars revolved in exact circles round it, was regarded by all learned men as a scientific authority which none dare question, till the coming of Copernicus in 1543.

"We have called to our aid all the sciences," writes the distinguished French astronomer, the Abbe Moreux, in his *Mysterious Science of the Pharaohs*, "we have spent centuries in labours and concurrent efforts; perfected our technique; continued with slow perseverance the task of our predecessors; pushed to an unimaginable point the exactness of our calculations, and ended finally in discovering something that was known 4,500 years ago!"

Evidence such as the foregoing leads us to conclude, with what may almost be described as a certainty, that the scientific as well as the technical knowledge necessary in those far-

off days to erect the Great Pyramid was not such as the Egyptians themselves possessed. Strabo informs us that the Egyptians of his day were destitute of scientific astronomical knowledge. Bunsen, the Egyptologist, says (*Egypt's Place in History*): "The old Egyptians were never a highly scientific people. Their astronomy was strictly provincial, calculated only for the meridian of Egypt . . . the signs of the Zodiac were unknown to them till the reign of Trajan."* Brugsch, another Egyptologist, says: "Their astronomy was based on empiricism [that is, on mere observation and experience, to the exclusion of scientific knowledge or reasoning], and not on that mathematical science which calculates the movements of the stars."

It was considerations such as these that led Mr. Taylor, as far back as 1859, to conclude that the Great Pyramid embodied scientific knowledge which proclaimed that, while *in* Egypt, it was emphatically not *of* Egypt, conclusions also arrived at by Dr. Seiss:—

"Never was it in the power of the ancient Egyptians to understand, much less to originate and enunciate the science found in the Great Pyramid. Other pyramids were

* The Temple of Denderah possesses two Zodiacs, one circular and the other oblong, and dates from Roman times (c. 30 B.C.) [though commenced earlier by Ptolemy XIII (c. 60 B.C.)], as does also the Temple of Esneh where there is another Zodiac. See Note at p. 57.

of Egypt, but they are totally lacking in all these elements of intellectuality. We look in vain for any traces that they ever understood the mathematical π [3.14159 . . .], much less construct so original a symbol of it. There is no proof they ever had any appreciation of the pyramid's system of numbers, or knew anything of the sun's distance or the earth's form. There is no sign that they ever used the pyramid inch, or the cubit of 25 inches, or any measure founded on intelligent earth-commensuration. There is nothing to show that they comprehended the precessional cycle, or ever made use of it."—*Miracle in Stone* (p. 93).

Seeing that the Egyptians had been shown how to build the ideal pyramid, and with the perfect model ever before them, they could copy it—externally—as often as they liked. But lacking the guidance of the master-architect, it is not surprising all subsequent pyramids show a steadily deteriorating standard of construction, combined with a total lack of the mathematical and other scientific knowledge embodied in the Great Pyramid, or of its interior passage system, since the latter, having been hidden from view when the Pyramid was but half completed, its existence in course of time became a matter of hearsay and tradition, coupled with much speculation as to its purpose. The descending passage and underground pit, however, were

known, and could be entered for so long as the position of the entrance doorway in the north face was known—it is said up to even as late as Roman times.* Hence these features appearing in all later pyramids, variously modified.

Compared even with the Second Pyramid, completed soon after the Great Pyramid, and probably commenced before the latter was finished, the structure of Khufu reveals its great superiority. Piazzzi Smyth, contrasting the masonry of the Great and Second Pyramids, says that "the mass of the structure of the Second Pyramid is execrable," at the same time quoting Vyse, who describes it as being only a kind of rubble work, so irregularly built that rain and sand have penetrated to a considerable depth in many places, and it was this looseness of construction that rendered it impossible for the Italian investigator, Belzoni, in 1818, when he discovered the upper of its two entrances, to make his way in, as they had collapsed in the forced entry made originally by the Arabs, such as they had made in the Great Pyramid.

* This doorway is referred to by Strabo (first century B.C.) in the following passage on the Great Pyramid, quoted by Sir Flinders Petrie: "It has a stone which may be taken out, and on being raised up there is a sloping [entrance] passage [revealed]"—referring to the hinged stone which, when shut, was flush with the adjacent casing stones, and indistinguishable from the surrounding masonry from ground level.

Another, and more recent, investigator remarks that "the Second Pyramid is but a poor imitation of that of Cheops; and although originally faced with limestone blocks, after the manner of the first, the core masonry is very inferior, rough and loose."

The reader may wonder—and the writer has been asked the question; one, too, that Proctor's theory of the Pyramid (to be referred to in a later chapter) was an attempt to answer, *inter alia*—why Khafra should find it necessary to build a pyramid almost as large as the Great Pyramid so soon after the latter, seeing that there is no evidence (as explained in our previous chapter) that it was used as his tomb. Also, why does it show such a marked deterioration in construction and workmanship, seeing that the skill that enabled the Great Pyramid to be erected would be still largely available?

As in the case of the Great Pyramid, the Second was not necessarily built by the monarch by whose name it is alternatively known. It was most probably designed and erected by the same individual as was responsible for the Great Pyramid, *but solely as a blind*; to draw off attention to the Great Pyramid, which, being of unique design and intended to serve a unique purpose, was to remain so all down the ages. He therefore built alongside the Great Pyramid another almost as large, and sufficiently well con-

structed to last throughout the centuries—the extreme care bestowed on the First not being necessary—with a single descending passage ending in a supposed burial chamber, like the similar descending passage in the Great Pyramid which alone, of its various passages and chambers, was capable of being entered (so long, of course, as the position of its entrance in the north face was known). For had this geometrical monument in stone—for such, in effect, the Great Pyramid is—been available for copying, it might have become lost amongst its three-dozen or so spurious copies, and the true one overlooked.*

With peculiar significance has this feature of a single descending passage terminating in a burial chamber been unwittingly copied in the Third and in all succeeding pyramids—unwitting, because its significance in the Great Pyramid was not realized—to whose subterranean chambers the kings of pagan Egypt have been consigned, thereby fulfilling in symbol the words of Ezek. xxxi. 14-18, which is a prophecy against Pharaoh, King of Egypt. “They are all delivered unto death, to the nether [or lower] parts of the earth . . . with them that *go down to the pit* . . . This is Pharaoh and all his multitude, saith the Lord.”

* There are about thirty-eight pyramids, or remains of pyramids, in Egypt to-day, some hardly recognizable as such.

32320

After construction of the Second Pyramid, succeeding pyramids not only diminish rapidly in size, but also in quality of workmanship, until we finally come to the last pyramids of all, those of the Twelfth Dynasty—which deteriorated into structures of mud-bricks faced with stone, many of which are now mere shapeless mounds or crumbled away into nothing.

“Many pyramids did Egypt build before the fashion went out of vogue ; but even with the original before them, there was not genius enough in all the land to make so much as a correct copy of it. Of all the enormous mounds of brick or stone which Egypt itself set up, there is not one to tell of aught but vaulting ambition and feeble imitation : there is neither science nor sense in any of them. How then could Egypt have originated this great scientific forerunner of them all ?” Whence, then, came this wisdom ?

The statement of Stephen in Acts vii. 22, that “Moses was learned in all the wisdom of the Egyptians and was mighty in words and in deeds,” has been taken as an inference that the Egyptians were very advanced in scientific and other attainments, and therefore were quite capable of erecting the Great Pyramid.

Mr. Kingsland, for example, remarks :—

“Would this have been stated in the Bible if that wisdom was such an ‘infantile thing’ ? [a reference to Smyth on the knowledge of

the Egyptians]. It is in fact merely begging the whole question to assume that the Egyptians could not have had the knowledge necessary to build the Pyramid. The fact that they *did* build it shows that they *had* the knowledge; and even supposing that there were certain things in the *design* which they did not know and which were 'inspired,' their knowledge of physics and mechanics, adequate to raise such a structure, can hardly have been 'inspired' also."

Mr. Kingsland again here shows the weakness of his logic: it is he himself that is "begging the whole question"—assuming the truth of what has to be proved, viz., that the Egyptians themselves were responsible for the Great Pyramid. Mr. Kingsland *assumes* that because the Pyramid stands *in* Egypt therefore the Egyptians must have conceived and erected it. Yet Egypt itself—to say nothing of India and various other countries—contains modern examples of great engineering undertakings, such as the Assuan dam and others, built by *British* engineers and *designed in London*, also all the necessary operating machinery, and the skilled supervision required to erect them, Egypt itself merely supplying the unskilled and semi-skilled labour. *This is precisely how the Great Pyramid came to be erected*—by highly skilled colonists who organized local labour to carry out an engineering

undertaking, of which they alone had the designs, under skilled supervision, just as in modern times British engineers have carried out great irrigation and railway works in Egypt and India which the natives by themselves would have been quite unable to construct. Yet, according to Mr. Kingsland's logic, the archæologist of the future who came across the remains of these works, say a thousand or more years hence, would be correct in attributing their construction to the natives of the countries, and without the intervention of some more highly-skilled race, an inference we know would be erroneous, since the task would be beyond their limited abilities.

“The Revelation enshrined in the Great Pyramid was communicated to the white race ; and as a result of laborious experiment in building various types of trial constructions in Pyramid form, the best means of structural perpetuation was ascertained by an isolated colony of the white race in Egypt. In the early experimental efforts in mass-masonry building, and in the earliest efforts in Pyramid-building, the few white supervisors of the primitive Egyptian workmen not only gained experience in the principles of heavy masonry construction, but also evolved the *mass-production principles of labour organization*, by which the Great Pyramid was constructed in record time, and to a *degree of mass accuracy in construction that has*

not to date been excelled. The primitive Egyptian labour at their disposal was utterly unskilled during the earlier stages of experimental building, the primitive Egyptian mentality being, as a matter of fact, incapable of attaining a higher standard of workmanship than that now classified as 'semi-skilled.' *By such unskilled and semi-skilled labour* the Great Pyramid was built under the expert direction of a few highly-skilled white supervisors and specialist workmen."—Davidson, *Great Pyramid's Prophecy concerning the British Empire and U.S.A.* (pp. 11) [italics in original].

Anyone who, like the present writer, has had experience of engineering construction work in countries where only primitive native labour was available, will appreciate the significance of the foregoing, in view of our comparison above between the building of the Great Pyramid and analogous undertakings in Egypt, India, and other (relative) primitive countries in modern times.

The reference by Stephen to the "wisdom of the Egyptians" naturally prompts the query: "What was the *nature* of this (so-called) wisdom?" Moses was brought up as an Egyptian under the care of the priests, and would therefore be initiated into the "mysteries," and become an "adept." His "wisdom" was therefore purely occult. Stephen was merely referring to the fact that,

in spite of being brought up in all the polytheism of pagan Egypt and being initiated into its "mysteries," he remained true to his birthright and worshipped the true God. The "mighty deeds" was a reference to his defeat of the Ethiopians as general of the Egyptian army (Josephus), an episode not recorded in Scripture. That period of his early life—purely as an Egyptian—is passed over altogether in the Pentateuch, and only indirectly referred to by Stephen in Acts vii. He was educated at Heliopolis and trained as a priest, and the greatest extent of his scientific knowledge was probably limited to a certain amount of mathematics. He was, no doubt, well versed also in Chaldee and Assyrian literature.

Even supposing Stephen's reference to the wisdom of the Egyptians connoted a skill of an unusually high order at that period of the world's development, it does not follow it was equally high a thousand years earlier when the Great Pyramid was being constructed. On the other hand, the inference would be that it was considerably less advanced. The Great Pyramid was already an ancient structure by the time Moses appeared in Egyptian history.

NOTE ON THE SPHINX AND ZODIAC OF
ESNEH.

There are several Zodiacs belonging to different periods inscribed on the walls of temples or in tombs throughout Egypt. Of these the best known, or the most frequently alluded to, are the two in the Temple of Denderah in South Egypt, and one in the Temple of Esneh. The Temple of Denderah was built in Roman times, though it is probably on the site of an older building; that at Esneh is slightly earlier, and is attributed to Ptolemy XIII, about 60 B.C. (The Ptolemaic era ended in 30 B.C., on the death of Cleopatra, when Egypt became a Roman Province.)

The Zodiac in the Temple of Esneh has the peculiarity of having a representation of a Sphinx inserted between the signs of *Leo* (lion) and *Virgo* (virgin) (refer Plate III in Macnaughton's *Egyptian Chronology*). From this fact two suppositions have been deduced.

Mr. Macnaughton suggests that the colossal Sphinx at Gizeh belongs to the same period as this Zodiac according to the arrangement of its signs, which he puts at 4713 B.C., a year which, according to his chronological scheme, fell within the reign of Khafra (4726 to 4660 B.C.).

Apart, however, from this chronology, Khafra has been associated with the Sphinx, since it was situated in front of his pyramid

(the Second), and is supposed to have been a likeness of him. A tablet, however, discovered last century in a wall on the Gizeh plateau, describing how Khufu carried out repairs upon the Sphinx, shows that that monument must have been ancient even in the days of the Great Pyramid. Its origin, therefore, is probably pre-dynastic, as Sir Gaston Maspero considered, and therefore can have no connection with the Sphinx represented in the Esneh Zodiac, which belongs to the Greek-Ptolemaic era at the very close of Egyptian history.

The very name Sphinx, in fact, given to it is a misnomer, and was bestowed on it by the Greeks, merely because it was similar to their own mythological figure, which had a *winged* body of a lion, and the breast and head of a *woman*, and such is the form of the sphinx in the Esneh Zodiac, which is therefore plainly a *Greek* Zodiac. The Gizeh figure, on the other hand, has a *man's* head, and a portion of its beard, which fell off long ago, and remained buried in the sand, is exhibited in the British Museum.

The Egyptians called the Sphinx of Gizeh *Hu*, or "Protector," since it represented this god in his aspect of the rising sun; hence the Sphinx being oriented towards the East. It was probably carved originally by a sect of sun-worshippers in pre-dynastic times, called "followers of Horus," mentioned in various passages of the "Book of the Dead," under the

title *Horem-Khu*, or "Horus-on-the Horizon," to whom the Sphinx was dedicated. Its present mutilated condition was started by the Arabs late in the fourteenth century, when a fanatical sheik, taking it for an idol, broke its nose in his zeal for Allah. The Arabs themselves designated it the "Father of Terrors," and had various traditions about it. One was to the effect that, as soon as the sun had risen, it gave responses to anything it was consulted upon, the answers coming from priests concealed in it, who had made their way into the Sphinx from the well-shaft in the Great Pyramid.

The other supposition derived from the Esneh Zodiac is that it solves the so-called "riddle of the Sphinx," by indicating by its position in this Zodiac where to commence the circle of the Zodiac, namely at *Virgo* and to end at *Leo*; also shown by the Sphinx having the head of a *woman* and the body of a *lion*. Astronomers to-day commence with *Aries* the Ram, and end with *Taurus* the Bull. Since the word *Sphinx* comes from the Greek *σφίγγω*—to join, or bind together—it is here appropriately used to join together the beginning and end of the Zodiac.

This, however, is not the solution of the "riddle of the Sphinx" of Gizeh, which we have shown has no connection whatever—except through its popular, but wrongly-applied, designation—with the representation

of the Greek Sphinx in the Esneh Zodiac. Personally, we do not think there is any "riddle of the Sphinx." It is merely a rock-hewn emblem of an ancient Egyptian god dedicated to sun-worship. The temple between its paws is, comparatively speaking, modern, and belongs to Roman times.

Many have tried to explain the Great Sphinx on symbolic grounds, but such explanations generally fail because of the initial error of regarding it as representing a *woman's* head.

The following legend, quoted from Mr. Spence's *Myths of Ancient Egypt* (p. 305), in connection with Thothmes IV, confirms the purpose of the Great Sphinx as a monument to the god *Hu*, of the rising sun, the *Harmachis* of the Greeks. Thothmes, wearied after hunting, rests in the shadow of the Sphinx, falls asleep and dreams.

"As he slept he dreamed, and behold! the Sphinx opened its lips and spoke to him: it was no longer a thing of motionless rock, but the god himself, the great Harmachis. And he addressed the dreamer thus: 'Behold me, O Thothmes, for I am the sun-god, the ruler of all peoples. Harmachis is my name, and Ra, and Khepera, and Tem. I am thy father, and thou art my son, and through me shall all good come upon thee if thou wilt harken to my words.' The Sphinx then commands the king to clear away the desert sand that was beginning to cover it."

ADDENDUM TO CHAPTER II

GEOMETRY OF THE GREAT PYRAMID

(See figs. 1 and 2. References to lettering and numbers apply to either diagram, fig. 2 being a skeleton diagram of Pyramid in perspective).

Given a year-circle (refer p. 40 above) whose circumference in Pyramid inches (derivation of which will be explained later) is one hundred times the number of days in the solar year—or days in a century (36,524.22). Required to construct a pyramid the perimeter of whose base equals the circumference of circle, and whose vertical height will equal its radius. Such is the problem which the architect of the Great Pyramid was required to carry out. The entire structure, with its internal passages and chambers, can be set out from this simple geometrical figure of a circle.

The side of the base, BC (fig. 1), will be one-fourth of 36,524.22 in. = 9,131.05 in. (755 ft. 9½ in.).

The length of the diagonals, 1-3 and 2-4 (fig. 2), will then be $\sqrt{2(9,131.05^2)}$, or the square root of twice the square of the base side = 12,913.26 in.

Next, the vertical height being equivalent to the radius of the year-circle, this value will be to *twice* the base side as the diameter of a circle is to its circumference: or, FA : 18,262 :: 1 : 3.14159; whence $FA = \frac{18,262}{3.14159} =$

5,813 in. (481 ft. 2 in.).* This particular proportion of height to base gives an angle of slope, ACF, of $51^{\circ} 51' 14''$, called often for this reason, the Pi (π) angle. From this the

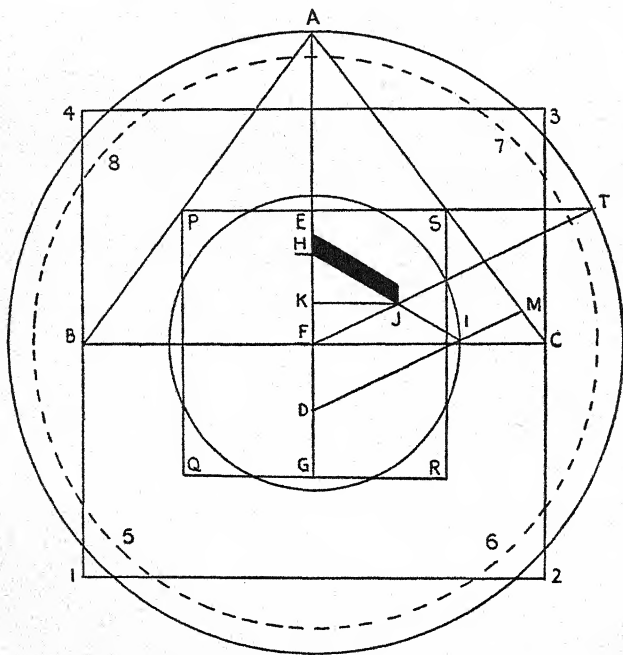


FIG. 1.

height can also be calculated: $FA = FC \times \tan ACF$. $FC = \text{half base} = 4,565.5 \times \frac{4}{\pi}$, or $4,565.5 \times 1.2732 = 5,812.794$.

* Existing height to topmost core-masonry course is 454 ft. 4 in. Where measures are given in *inches only*, these are *Pyramid inches*. (1000 Pyramid in. = 1001 British in.).

From these particular proportions of the Great Pyramid, with its π angle of slope making it analogous to a circle—a characteristic not remotely found in any later pyramid—it has been—and still is—frequently asserted that it solves the problem of “squaring the circle,” a problem, however, which, like that of perpetual motion, can only be solved approximately. Many inventors have *nearly* discovered perpetual motion, and might have done so were it possible to abolish all friction. In the same way, since the value of π cannot be exactly determined, being an incommensurable number, the circle cannot be truly squared, either mathematically or geometrically—geometrically because there is no geometrical method of drawing a straight line equal to the circumference of a given circle, in spite of the claims of “circle-squarers” to the contrary.

To claim the Great Pyramid “squares the circle” is to go beyond what its geometry reveals. It defines equality of *boundaries*, since the perimeter of its square base equals the circumference of year-circle, 1234 (full outlines), but the circle contains the *larger area*. This arises from the fact—not appreciated by non-mathematicians—that the circle has this peculiarity above all other plane figures having the *same perimeter*—it will contain the *greater area*.

A circle to give an equivalent area to that

contained in the square base is shown in dotted outline, 5678, and will have a diameter of 10,303·3 in. as against 11,626·0 in. for the outer one. Such an equal area circle is defined as to its diameter, on a scale of $\frac{1}{160}$, by the granite floor of the Pyramid's antechamber, the total length of which, on same scale (116·26 in.), defines the diameter of the equal-boundary circle.

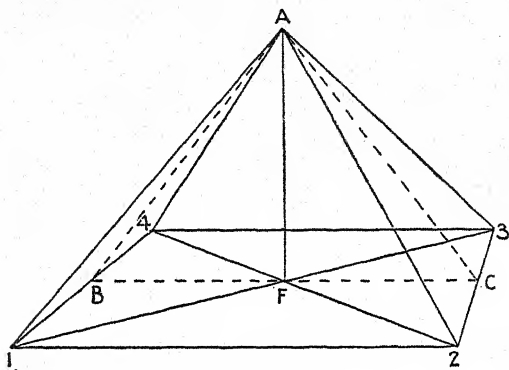


FIG. 2.

To calculate slope of passages. On centre F describe square and circle PQRS having equal area to triangle ABC. Produce side of square PS to T. Join TF. Then angle TFC gives passage angle, equal to angle ETF, which can be calculated trigonometrically. ($\sin ETF = \frac{EF}{FT}$, where EF = half side of square PQRS, and FT = vertical height AF, being radii of same circle. $\frac{EF}{FT} = \frac{\sqrt{\pi}}{4} = 0.4431 = \sin 26^\circ 18' 10''$).

Trisect EF at H and K. Bisect FG at D. Through D draw DM parallel to FT, cutting circle at I. Then DM gives Descending Entrance Passage. IH gives First Ascending Passage and Grand Gallery at same angle as TF. JK gives Horizontal Passage to Queen's Chamber, apex of which lies on centre line AF.

Since the perimeter of the base equals the circumference of a circle described with the vertical height of the Pyramid (FA) as its radius, then the quadrant of that circle equals in area the right vertical section (ABC) = area of square PQRS. Also, a circle described with radius equal to the side of this square (PQ) = area of pyramid's base (1234), that is, the circle 5678.

These facts argue a mathematical knowledge (not too well known even in modern times) unknown to the ancient Greek mathematicians till about 500 B.C., that is, not till some 2,000 years after the construction of the Great Pyramid, for the proposition that the sum of the squares of the two sides of the base of a right-angled triangle is equal to the square on the hypotenuse, a proposition which is the foundation of all geometry and trigonometry, is generally attributed to Pythagoras. And the problem of calculating the area of a circle is generally believed to have been discovered only in the third century B.C. by Archimedes.

It seems very unlikely that two given dimen-

sions, base-side and height, should be selected arbitrarily for the Great Pyramid, and yet reveal accidentally such remarkable geometrical relations as the foregoing. We can only logically infer the Great Pyramid was definitely erected to monumentalize these geometrical facts.

CHAPTER III

THE TESTIMONY OF TRADITION

Herodotus on the Builder of the Pyramid.

Egyptian hatred of the Pyramid-builders.

Origin of this calumny.

Entry of Pyramid by Al Mamoun.

Arabian writers on the Pyramid.

Inscriptions on Casing-Stones.

Coptic traditions about the Builder.

Built over a period of four reigns.

"The very marrow of tradition's shown,
And all that history weaves."

CHARLES LAMB.

"Tradition is often but the truth fossilised, the skeleton beneath the superincumbent strata of history."—LEWIS SPENCE.

CHAPTER III

THE TESTIMONY OF TRADITION

IT will be of interest at this stage to examine what has been said so far respecting the Great Pyramid in the light of tradition, and see what confirmation it supplies of the conclusions arrived at.

Regarding the Tombic theory, which we have shown was one borrowed from later pyramids, we have mentioned Herodotus and Diodorus as the authors of the earliest references we have to the Great Pyramid. Herodotus, in his description of the building of the Pyramid, says that "Cheops ordered Philitis [the individual to whom Herodotus ascribes the Pyramid] to prepare him a tomb," but adds that it was never used as his tomb, the actual burial place of Cheops being "in a subterranean region, on an island there surrounded by the waters of the Nile."

Such a deep burial pit, so constructed that, at high Nile, water enters the trench round it, thus converting it into an artificial island, was discovered and excavated by Colonel Howard Vyse, situated about 1,000 feet south-east of the Great Pyramid, and has been known as Campbell's Tomb, an appellation

given to it by Vyse after the name of the then British Consul in Egypt. Though a sarcophagus—described as “an antique, rude sarcophagus of gigantic proportions”—was found in this pit, there was no body in it, and though Professor Smyth and others after him considered this was the burial place of Cheops, since it appeared to answer the description given by Herodotus as the burial place of that monarch, more recent research does not uphold this identification, and it is nowadays ascribed to a much later date.

Some have attempted to see in the above description by Herodotus a reference to the subterranean pit below the base of the Great Pyramid itself; but though this is about 100 ft. down, it is still well above the level of high Nile, and therefore could not be described as an island, even artificially.

That the, so-called, Campbell's tomb formed the burial place of Cheops was probably due to a tradition in order to account for the emptiness of the supposed sarcophagus in the Great Pyramid, for, according to Professor Sayce, both the Great and Second Pyramids had been entered long before Herodotus visited Egypt, because both Cheops and Cephren (or Khafra), the builder of the Second Pyramid, who were (according to Herodotus) hated by the Egyptians for their tyranny, were secretly buried elsewhere, as the people had threatened to drag their

bodies from their tombs and tear them to pieces.

Didorus Siculus also says that Cheops and Cephren were hated because of the forced labour imposed upon the Egyptians to build their respective Pyramids. "Although," he writes, "those Kings intended these for their sepulchres, yet it happened that neither of them were buried there. For the people, being exasperated against them by reason of the toilsomeness of these works, and for their cruelty and oppression, threatened to tear in pieces their dead bodies and with ignominy to throw them out of their sepulchres. Whereupon, both of them dying, commanded their friends to bury them in an obscure place." As mentioned above (p. 7), while Khafra's pyramid—unlike Khufu's—*might* have been intended (and used) as a place of burial, available evidence indicates it was never put to such a use, and not even his name has been found in it, though it does appear—along with Khufu's—in the Great Pyramid, but only as a quarry mark.

The probabilities are that while, according to custom, preparations were made during their lifetime for burial in Egypt (not in their respective pyramids, which were *kha*, or "spirit" pyramids, or *cenotaphs*, as were the earlier pyramids of Zoser and Seneferu, but in tombs elsewhere) at the last moment their bodies, and those of their families, were secretly

conveyed out of the country and buried elsewhere,* perhaps in the Sinai peninsula. In this connection it is interesting to note that in the Sinai district, the name of *Khnum Khuf* (as on one of the inscriptions in the spaces above the King's Chamber of the Great Pyramid) appears on the rock at Wadi Magharah, where mining operations were carried on during the Fourth and Fifth Dynasties and later.

In view of the statements by both Herodotus and Diodorus that Khufu and Khafra were hated because of their closing of the Egyptian temples and suppressing the services, combined with the enforced labour to build their pyramids, the following extract from Sir Wallis Budge's *Dwellers on the Nile*, setting forth a novel view why the ancient Egyptians took such pains to conceal the bodies of their rulers, is of interest :—

“It has always been assumed that the Egyptians expended such time and thought on the burial of their dead because they loved and revered them, and the excavators have been denounced for disturbing the dead in their last sleep, and destroying the houses of eternity in which loving hands

* This view is strengthened by the fact that neither the mummies of Khufu or Khafra have so far been found, and that when, a few years ago, the intended burial places of the mother and daughter of Khufu were discovered on the Gizeh plateau, they were found empty.

had placed them. But it is possible the Egyptians did not take all this trouble in hiding their dead in what they deemed to be inaccessible places through love, but through *fear*. Mummification of the body, the bandaging of the same, the nailed coffin and sarcophagus, the well-constructed tomb with its walled-up doorways and shafts, and concealed entrance, were all intended to keep the deceased in his tomb, and to prevent him from coming back among the living and working his will upon them."

There are many people who regard the Great Pyramid as a divinely inspired monument, both on account of its symbolic and religious nature, combined with the knowledge enshrined in it being so far in advance of what was generally known at the time of its erection, and for many centuries after. This belief is confirmed by the ancient tradition referred to above (p. 13), attributing the design of the Great Pyramid to Iemhotep, to whom it is said the plans "descended from heaven" (Arthur Weigall), or, as we should say, were "divinely inspired."

On the other hand, it has been argued, in order to refute the idea that there is anything supernatural about the Great Pyramid, that the character given by Herodotus and Diodorus to the builder of it as a tyrant and oppressor hardly befits that expected of anyone divinely inspired.

When, however, we take into account the *source* whence Herodotus obtained his information, and the fact that some 2,200 years separated him from the time of Khufu, we can then assess this information at its proper value.

Mr. Riffert (*Great Pyramid Proof of God*, p. 210) has very aptly remarked: "All things subject to human examination and judgment must run the gauntlet prescribed by the court of popular prejudice and prevailing standards of appeal. Unfortunately, the sentiment of this court has never been uniformly noble, nor its conceptions of truth, fact and justice, correct. For this reason the Prince of Peace was crucified on Calvary as an impostor, St. Paul beheaded in Rome as an enemy of the Empire, Savonarola hanged in Florence for preaching righteousness, John Huss burned at the stake for defending the Gospel in Bohemia, and William Tyndale strangled and burned for translating the Bible into English."

For just the same reason was the information which the priests gave to Herodotus prejudiced and purposely exaggerated.* Since

* Herodotus claims that he was duly initiated into the "mysteries" of Egypt. "I know well," he states, "the whole cause of the proceedings, but they shall not pass my lips." In this connection, however, Professor E. H. Blakeney points out that the portion of the "mysteries" explained to strangers, such as Herodotus, Plutarch and others, was strictly limited,

the paganism and polytheism of Egypt was an abomination to the architect of the Great Pyramid (since this structure—and the Second Pyramid—bears not the slightest trace thereof, in sharp distinction to all other ancient structures in Egypt, but was erected to the one true God), the closing of their temples and suppression of their religion during its building would naturally be recorded by them—and ever afterwards remembered—as an act of tyranny and oppression. Hence the animosity of the priestly caste against Khufu and Khafra, whereas Menkaura, the builder of the Third Pyramid, the construction of which aroused no such hostility against him, was regarded as the most honoured of kings because he re-opened the temples and restored the worship of the Egyptian gods. This seems to imply that, on the close of Khafra's reign, the country lapsed again into paganism.

Owing to this intense prejudice against the

while more important secrets were not even revealed to all the priests, but only to the highest initiates.

In addition, since the Egyptian priests would not, as a rule, be sufficiently acquainted with Greek to be able to converse with a foreigner, apart from the fact that their religion would forbid them having any intercourse with one, since he would be regarded as "unclean"—merely to converse with Herodotus would have caused pollution—the "priests" so frequently mentioned by him were more likely to have been minor officials, or "beadles," who conducted visitors over the temples and other buildings of interest, like the vergers of our own cathedrals and churches to-day.

two great pyramid builders of the Fourth Dynasty, Herodotus goes on to inform us that "they (the Egyptians) do not so much like even to mention their names, but commonly call the pyramids after Philiton, a shepherd," doubtless to attach a further term of reproach to them, since we are told in Gen. xlv. 34, "Every shepherd is an abomination unto the Egyptians," a statement given us by Moses, who was himself brought up from the cradle as an Egyptian.

A late French Egyptologist, however, M. Lenormant, states that the priestly legend of popular hatred against the builders of the Great and Second Pyramids has some historical foundation. "Everything," he says, "seems to indicate that the end of the Fourth Dynasty was a time of revolutions and troubles caused by the preceding oppression. . . . The splendid statues of Khafra, which decorated the temple near the Great Sphinx, have been found in pieces in a well, where they had been precipitated in a revolutionary movement, evidently but little posterior to his reign." It is quite likely, however, that this movement was religious in its causes, stirred up by the priests in reprisal for the suppression during the reigns of Khufu and Khafra of the temples and their services.

Mr. Wake, from whom the above statement of M. Lenormant is taken, adds the comment: "It is not at all improbable that the bodies

of both Cephren and Cheops [Khafra and Khufu] were removed from their resting places during the commotions which occurred at the end of the Fourth Dynasty."

The animosity, however, recorded by Herodotus against these two monarchs should more probably be connected with the Hyksos (or Shepherd) dynasty, which ruled in Egypt at a much later period, from B.C. 1937 to 1830, some three centuries before the time of Moses (*b.* B.C. 1566; Exodus, B.C. 1486), and for this reason both Herodotus and the Egyptian priest-historian, Manetho (third century B.C.), have confused them with the Great Pyramid kings of a far earlier epoch, an error continued down to the present, Smyth, Colonel Garnier, and others, since making this mistake. This confusion arises from treating *similar* circumstances as if they were *identical*, whereas it was but a case of history repeating itself with the advent of the Hyksos kings, who likewise suppressed the Egyptian paganism and closed the temples.

The evidence so far examined, then, shows that the reputed builder of the Great Pyramid was not interred in it, and was not a tyrant, a term of reproach either purposely fabricated by the Egyptian priests, the sole guardians and purveyors of the country's history, or more properly belonging to a much later dynasty.

The probable conditions ruling in Egypt during the advent of the Great Pyramid builders, when paganism was suppressed, seems better expressed in the following statements of a recent writer than in the biased records of Manetho and Herodotus:—

“The beauty of the work done assures us that the people were willing, and did enjoy the work of construction much in the same way as we get the major part of our enjoyment out of constructive work of varying sorts; whilst history establishes that the people were by no means slaves (Laing says, in fact, that the state of civilization in Egypt 6,000 years ago appears to have been higher in all essential respects than it has ever been since, or is now in any Asiatic and in many European countries)—all this gives the construction [of the Great Pyramid] a value in our eyes much greater than first consideration could accord.”

“Having regard to the advanced state of civilization and the great measure of popular freedom, the perfection of work done at the Pyramid can surely only be accounted for on the supposition that the workmen’s interest was largely that of a religious enthusiasm, and not solely that of hire, such as a mere tomb would imply.”
—F. W. Chapman in *The Great Pyramid from the Aspect of Symbolism and Religion* (pp. 7 and 23).

Seeing, then, that all available evidence—

constructional and otherwise—clearly disproves the tombic idea of the Great Pyramid, we must consequently seek elsewhere for its source, and we find it almost exclusively of Arabian origin, mostly dating from the time when the Pyramid was forcibly entered by orders of the Caliph, Al Mamoun, early in the ninth century of our era, no doubt invented to allay the chagrin of that worthy and appease his vanity after the shock it had received at finding—nothing!

One such story (quoted by Smyth) relates how, in the King's Chamber, "was found a dead man with a breastplate of gold, and an emerald vase a foot in diameter . . . a sword of inestimable value, seven spans long, with a coat of mail twelve spans in length." A similar account is given by Abd-el-Hokim, a contemporary of Al Mamoun, of "a statue resembling a man found in the sarcophagus, and in the statue [mummy-case] a body with breastplate of gold and jewels, bearing characters which no one could read."

Dr. Sprenger (quoted by Vyse) makes the following comment upon these Arab writers:—

"It may be remarked that the Arabian authors have given the same accounts of the Pyramids, with little or no variation, for above a thousand years; they appear to have repeated the traditions of the ancient Egyptians, mixed up with fabulous stories and incidents, certainly not of Mahommedan invention."

Professor Greaves, too, the first of modern investigators, describes these Arabian traditions as "little better than a romance," and Sir Gardner Wilkinson, who himself had doubts of the Great Pyramid being a tomb, has also pointed out they were very unreliable.

Dr. Seiss, indeed, mentions one Arab writer who says of the Pyramid, when first entered: "Nothing was discovered as to the motive or time of its construction"; and he also points out that for six centuries after Al Mamoun broke into it, none of the Arab authors who recount this feat say anything of any *human* remains or indications of burial having been discovered—they only refer to a figure or statue *resembling* a man being found in it. He also refers to several European investigators of the sixteenth to nineteenth centuries, who—though some of them considered the Pyramid *might* have been intended for a sepulchral monument—agree in stating there is no actual proof of such use.

We have referred above (p. 8) to the idea that the casing-stones of the Great Pyramid had inscriptions on them, an idea borrowed from Herodotus, but also expressed by Abd-al-Latif, Masoudi, and other Arabian writers. The first-named, for example, says: "These stones are covered with writing in that ancient character of which no one now knows the value. These inscriptions are so numerous that if one could

copy upon paper those only which may be seen upon the surface of these two pyramids (Great and Second), one would fill more than 6,000 pages" (cited from Bonwick, p. 48).

According to Herodotus the inscriptions, in Egyptian characters, which his interpreter pretended to translate to him, stated the amount expended in supplying the workmen with food, to the value of 1,600 talents. The explanation, however, is probably given by supposing Herodotus did have some inscriptions on tombs (of which there were plenty in the vicinity of the Pyramids) read to him, but, like many another traveller, forgot to note exactly where they were inscribed, and when he came to write up his travels afterwards, assumed they were on the Great Pyramid, which naturally had left a deeper impression upon his mind than any other monument he had seen.

Another Arabian historian, Masoudi (tenth century, A.D.), whose account of the pyramids is very similar to that of Al Hokim, asserts they were covered with continuous inscriptions. Bonwick cites an investigator of the late seventeenth century as apparently confirming this, by stating: "I saw upon some of them (the pyramids) some hieroglyphic characters, but had not time to write them out." Another traveller, however, but sixty years later, failed to note any inscriptions whatever, and expressed surprise thereat. "Who can persuade

himself," he remarks, "that the Egyptians would have left such superb monuments without the least hieroglyphical inscription? They who were profuse of hieroglyphics upon all edifices of any consideration."

No pyramids, however, which have retained their casing, have any writing upon them, and this is the case with such casing-stones and fragments thereof of the Great Pyramid as still remain. Bonwick cites a third witness to the effect that "the small part of the coating which remains on the Second Pyramid has no hieroglyphics. The larger pyramids at Abousir, Sakkara, and Dahshur, are all coated, but have no hieroglyphics, and I am of opinion that the Pyramid of Cheops had none either."

We may, therefore, generally dismiss the idea of there having been inscriptions on the Great and Second (or indeed any) Pyramids as amongst the "fabulous stories" of Arabian writers, or due to *graffiti* left on the lower casing-stones by travellers, which have been mistaken for original hieroglyphics. Bonwick mentions two travellers of the fourteenth century, both of whom saw inscriptions on the Pyramids, some of them in Latin and Greek, on all four sides.

The reader may perhaps deem it unnecessary at this stage of pyramidology to discuss the question of inscriptions upon the Great Pyramid—few to-day believe it had, and, in any case, the casing is now virtually non-existent.

A recent volume on the subject, however, of some length (it runs to close on 250 pages), treating the Pyramid on the lines of mysticism and esotericism, regards this idea of inscriptions upon its casing-stones as an important factor in the author's thesis, showing that there are minds which attach some significance to them. It seems, therefore, a point which may be discussed as still one of interest. This writer's suggestion as to how the casing-stones came to be stripped off being somewhat novel and unusual, we will quote the following extract* :—

"In the domain of pyramidal polemics, few questions can interest us more than that as to what was the nature of the change in the thought of the peoples of Egypt which turned the 4,000 years of reverence that had attended the Pyramid's life so uniformly, into a disrespect so thorough as to permit of the beautiful covering stones being torn down and carted away for the purpose of mosque and palace-building, which assuredly has been their fate.

"That the sixteen acres of perfect advertising space (*sic* !) were maintained spotless for very many centuries there is some historic evidence to show. . . . That these facilities for proselytizing purposes

* *The Great Pyramid of Gizeh*, by F. W. Chapman (Rider and Son), revised edition, 1931.

were gradually much coveted as a means of righting wrongs, and of helping into acceptance ideas that were felt by those in authority to promise support, we may however feel well assured of. For gradually, as the fortunes of Egypt came to be influenced by foreign invasion, peaceful or aggressive, some freedom was permitted in this matter of *graffiti*. That it was one of these writings that initiated the destruction and removal of the covering stones need not be doubted "(pp. 168-169).

We are afraid the prime cause of the loss of the Pyramid's casing-stones was something more banal and material—man's cupidity and greed in the first instance, followed later by the forces of nature, which enlarged the destruction previously started by Al Mamoun.

We have pointed out that certain experimental work was undertaken before the Great Pyramid was erected in order to train the native labour sufficiently to carry out its construction, and that the more advanced stage of this experimental work covered a period of approximately fifty years (see p. 13 above). This would take us back to the reign of Shaaru when co-regent with Seneferu, the last king of the Third Dynasty. What has tradition to tell us on this point?

Both Masoudi and Abd-al-Latif cite Coptic traditions to the effect that King Surid (or Shaaru) was the originator of the Great

Pyramid. Masoudi relates that, according to the Copts, whose traditions (being descended from the ancient Egyptians) were held in great esteem by the Arabs, "Surid, one of the kings of Egypt before the Flood, built the two great Pyramids (Great and Second), notwithstanding they were subsequently named after a person called Sheddad-ben-Ad [compare Herodotus and similar attribution by him to Philitis] . . . the reason for building them being a dream which occurred to Surid three hundred years previous to the Flood" (Wake citing from Vyse).

Abd-al-Hokim also says: "The greater part of chronologers affirm that he who built the Pyramids was Surid ibn Salhouk, King of Egypt, who was before the Flood three hundred years."*

The sequence of operations, therefore, in connection with the Great Pyramid was probably as follows.

Preliminary work was undertaken during the reign of Surid (or Shaaru)—hence the Coptic traditions referred to connecting him with the Great Pyramid—and while co-regent

* The argument, often advanced, that, had the construction of the Great Pyramid been pre-Deluge, it could not have survived to the present, arises from a misunderstanding of the actual nature and location of this visitation, owing to the account in Genesis as given in our A.V. failing to place the narrative in its proper perspective.

with Seneferu. Hence the attempt of the latter to convert his original *mastaba* tomb—the “false” pyramid of Meidoum—into a true pyramid, as part of the preliminary training operations, and his constructing his later pyramid at Dahshur as a true, stone-built, pyramid from its foundation, the idea of which was given by the plans of the Great Pyramid.

Actual construction was begun on Khufu coming to the throne upon the death of Seneferu, and while Surid was still alive, in 2645 B.C. (Surid, 2658-2629 B.C.). Work was continued after the death of Surid, during the sole reign of Khufu, and was completed during his co-regency with Khafra, three years before the death of Khufu himself in 2622 B.C. This total period does thus cover practically half a century; from Seneferu (2669 B.C.) to Khafra (2622 B.C.). The whole work, therefore, in connection with the Great Pyramid extended throughout four overlapping reigns: those of Seneferu (last king of the Third Dynasty); Shaaru (Surid) (the connecting link between the Third and Fourth Dynasties); Khufu and Khafra.*

Though the Pyramid's construction thus occupied a period covered by four overlapping reigns, its erection—once begun—was carried

* Dates taken from Chart I in Davidson's *Early Egypt, Babylonia, and Central Asia*, the best modern authority on ancient Egyptian chronology.

through as one continuous series of operations without any appreciable break between them, as is proved by structural evidence in the Pyramid itself. [Refer in this connection Chapter II of the author's *Witness of the Great Pyramid* (2nd edition) on "Accretion Theory of Pyramid Building."] We mention this here since it has a bearing upon another theory—the astronomical observatory theory—which we shall refer to later, and which relies for its support upon the Pyramid being erected in distinct stages separated by a considerable interval.





CHAPTER IV

THE GREAT PYRAMID AND ITS BUILDER

The Great Pyramid's Origin.

Egypt's civilization due to a foreign race.

Advanced skill of an ancient Civilization and its Colonies.

Their extinction : Analogous instance in Africa.

Atlantis as country of origin ; Comparison of Egyptian
and Mexican Pyramids.

Adamic Race as the Parent of White Civilization.

Its Habitat in Central Asia.

The Noachian Flood : did not affect Egypt.

Great Pyramid attributed to Sethites.

Enoch and the Great Pyramid.

The Pyramid built during the Dynasty of Noah.

Manetho on invasion of Egypt by a foreign race : Hindoo
tradition to same effect.

"They [the Sethites] . . . went out by colonies everywhere; and each colony took possession of that land which they light upon, and unto which God led them; so that the whole continent was filled with them, both inland and maritime countries. There were some also who passed over the sea in ships, and inhabited the islands: and some of those nations do still retain the denominations given them by their first founders; but some have lost them also: and some have only admitted certain changes in them, that they might be the more intelligible to the inhabitants . . . giving names to the nations that sounded well that they might be better understood amongst themselves; and setting agreeable forms of government over them as if they were a people derived from themselves."—JOSEPHUS (*Ant.* Bk. 1, Ch. V).

CHAPTER IV

THE GREAT PYRAMID AND ITS BUILDER

THAT the Great Pyramid was planned and raised during the reigns of four different monarchs lends strong support to the idea that its *design* was due to an individual of another race, such as we have shown its peculiar and unique construction clearly indicates must have been the case, and drawing attention to the analogous examples of modern British irrigation and other engineering works in Egypt and India at the present time, which the natives of these (and other) countries would have been quite unable to carry out on their own initiative. It was not consequently the conception of any particular monarch, though since it was actually constructed and raised mainly during the sole reign of Khufu, it would naturally become associated with his name.

Here, again, tradition has something confirmatory to tell us. Diodorus, for example, says:—

“The architects who built the pyramids are much more to be admired than the monarchs themselves, who were at the cost

of them. For the former performed all by their own ingenuity, but the latter did nothing but by the wealth handed to them by descent from their predecessors, and by the toil and labour of other men."

Herodotus also ascribes the Pyramid to a person he calls Philitis, or Philiton, whom he describes as architect to Cheops, just as an earlier tradition ascribes it to Iemhotep, architect to King Zoser, and we have further mentioned an Arabian tradition attributing it to Sheddad-ben-Ad, all these different personages being obviously traceable to a common origin.

"Many of our eminent archæologists and philologists contend that from an analysis of the manners and customs, art, science, geometric and mathematical knowledge, combined with the varied religious concepts, it is abundantly evident that much of it was brought to Egypt and was not native to it. . . . From whom, then, did Egypt obtain the seeds of her first greatness? What nation ruled, in an outstanding manner, the world of the period between 5,000 and 6,000 B.C.? And what are the accomplishments that made the name of the 'Mysteries' and the fame of Egypt so outstanding?"—John G. Davie in *Eureka*, p. 16.

All available evidence—archæological and traditional—when co-ordinated and examined collectively, leads to but one conclusion re-

specting the answer to the foregoing questions ; namely, that the seeds of Egypt's greatness were sown by a few colonists who entered the country peaceably and organized the carrying-out of great constructional works, the technical and scientific skill embodied therein being in their sole possession, which they reduced to "rule-of-thumb" equivalents within the capacity of the native labour to enable these works to be carried out. On completion of the work they left the country, taking their knowledge with them. Hence the rapid falling off in constructional work which showed itself after the Great Pyramid had been completed.

"It is significant that after the completion of the Great Pyramid, pyramid-building technique, mass-production methods of construction, and mass accuracy in construction, rapidly degenerated. The structural aim having been achieved in Egypt, the directing minds were withdrawn. Technique, in consequence, deteriorated with the lengthening shadow of a rapidly declining tradition, and organization for mass production became a mere matter of rule-of-thumb application."—D. Davidson.

In all stages and periods of civilization, the highest forms have existed alongside the primitive and barbarous.* Archæology proves

* While advanced civilizations existed in (so-called) prehistoric times, so to-day the converse is true, and

conclusively that a highly-developed civilization existed in times far too readily considered as primitive and prehistoric, and it was just such a civilization that ruled, in an outstanding manner, the world of pre-Deluge days—the “dominant race” of Sir Wallis Budge (refer citation below)—leaving its impress not only in Egypt, but in other regions as well. This will explain Petrie’s statement that a significant feature of the first three Egyptian dynasties was the rapid rise in art that then took place.

Referring to this same epoch, which he describes as “one of the most fascinating epochs of Egyptian history,” Sir Ernest

racess of primitive instincts and habits are still found in the more remote regions of Australia and New Guinea. In the *Morning Post* of July 25, 1935, for instance, it was announced that an expedition was being organized to explore the (at present) unknown territory surrounding the Upper Sepik River and its source in New Guinea.

“The difficulties of exploration,” runs the account, “of such a territory are increased by the hostility of the natives, who ‘shoot at sight,’ by the tortuous nature of the river itself, and by the rough and rugged country which rises into magnificent mountain peaks, snow-covered, though within 250 miles of the equator and rising to 14,000 feet. This vast virgin country is densely populated by the men of the Sepik, a pure and hitherto untouched native people, which still remains an enigma to ethnologists.

“Reputed to be cannibals and head-hunters, and living in a stone-age, ignorant of the use of metals, they remain one of the few primitive peoples unknown to the civilized world. Yet, if reports are true, they are advanced agriculturists, whose intense cultivation of the mountain terraces has been seen from afar, though never reached.”

Wallis Budge writes in the Preface to his *History of Egypt* (vol. ii):—

“In it we see the dominant race in Egypt at their best, and it has been truly said that it was the kings of the Fourth Dynasty who made the great reputation which the Egyptians have enjoyed ever since throughout the world. It is the fact that the master-minds which planned and the mechanical skill which built them (the Pyramids) remained unsurpassed in all the subsequent history of Egypt. Cheops and his immediate successors certainly deserve praise for the good sense which they displayed in giving their architects and clerks of works a free hand in their mighty undertakings;* and it must not be forgotten that the sculptures and bas-reliefs executed during their reigns are as wonderful for their delicacy and beauty as the Pyramids are for their size and solidity.”

Elsewhere in the same volume Sir Wallis Budge remarks:—

“The civilization of the dynastic Egyptians developed out of the primitive culture of the indigenous pre-dynastic peoples of Egypt, *after it had been modified and improved by the superior intelligence of a race of men, presumably of Asiatic origin, who invaded and conquered Egypt.*” [our emphasis.]

This conclusion is implied by Sir Flinders Petrie who, referring to the era of the Great

* Compare statement from Diodorus quoted above.

Pyramid builders, says: "The exquisite workmanship often found in the early period did not so much depend upon a large school of widespread ability, *as on a few men far above their fellows.*" And referring to the supreme accuracy of the work embodied in the Great Pyramid, he states: "This supreme accuracy was *limited to the skill of one man.*" [our emphasis.]

M. Lenormant, a distinguished French Egyptologist of an earlier generation, also remarks, in his *Ancient History of the East* (9th edition):—

"The first reigns of the Fourth Dynasty marked the culminating point of the primitive history of Egypt. The splendour and richness of the country would appear to have been immense under these princes, and are sufficiently attested by their prodigious constructions."

A former English Egyptologist, Dr. S. Birch, gives a similar account of the attainments of Egyptian civilization at this epoch. He states (*Ancient History from the Monuments—Egypt*):—

"Architecture, as represented by the Pyramids, had become an advanced science, and reflected the geometric and theoretical knowledge of mathematics which their form and structure described for all future ages.*

* Refer our chapter II and the geometrical nature of the Great Pyramid, and reference to Petrie thereon at p. 29.

The technical masonry was unrivalled, the finish admirable and unsurpassed by any later efforts of the Egyptian architect. The hardest materials were hewn into the requisite form of the truest proportions . . . in sculpture a canon of proportion had been discovered and laid down for the human figure, granite, diorite and other hard stones moulded into shape by the efforts of the chisel. The statue of Cephren (Khafra) is equal, if not superior, to the subsequent efforts of Egyptian sculpture, while in the features is clearly to be recognized a portrait of the monarch, showing that the power of producing excellent representations of the living form in all its details existed."

This period of rapid development, under the tutelage of a foreign race with advanced scientific and cultural attainments, directly led up to the era which saw the erection of the Great Pyramid. Sir Ernest Budge, however, records that, immediately following the Fourth—or Great Pyramid—Dynasty, a decay set in, the Egyptians themselves becoming the victims of conservatism and conventionality, a decay that is apparent in the Second and succeeding pyramids on the Gizeh plateau, and no doubt arose from the sudden withdrawal or disappearance on the part of the colonists of this dominant race.

These colonists were not—like the component parts of the British Empire—integral

units of a great Empire, but isolated groups, which developed the native material of independent races amongst whom they settled. Being few in numbers compared to the natives, they were obliged to intermarry. The stock thus gradually deteriorated and lost its former pre-eminence and scientific skill, which in course of time became merely traditional, since this knowledge was kept like the secrets of a close corporation, not unlike our own mediæval guilds.

With regard to this deterioration, mentally and physically, of the original parent civilization, the following passage from Josephus is of interest. Following his reference (quoted later in this chapter) to the Sethites as the builders of "the pillar of stone in the land of Siriad (Egypt)," Josephus continues (*Antiquities*, Book 1, Chap. III) :—

"Now this posterity of Seth continued to esteem God as the Lord of the universe and to have an entire regard to virtue, for seven generations ; but in process of time they were perverted, and forsook the practices of their forefathers . . . nor had they any concern to do justice towards men. But they now showed a degree of wickedness, whereby they made God to be their enemy ; for many angels of God accompanied with women [compare Gen. vi. 2 : "The sons of God (Sethites) saw the daughters of men (Cainites) . . . and took them wives of all which they chose"], and begat sons that

proved unjust, and despisers of all that was good"—*i.e.*, they degenerated, first morally and intellectually, and later physically, eventually dying out.

The secrecy of their advanced knowledge, which this race maintained, would account for the omission from monuments of any kind in Egypt of anything that would give a clue as to the methods employed in their construction, particularly in the erection of the pyramids, such as we would to-day probably find beyond our capacity to carry out. There are constructional problems, for example, in connection with the Great Pyramid which still remain a puzzle for us.

In other directions, also, besides engineering construction, we are faced with problems as to what was the procedure followed to carry them out. How, for example, did their artists execute the wonderful paintings found on the walls and ceilings of rock-cut tombs and chambers, wherein daylight could not penetrate, still almost as fresh as when they were done. Artificial light of some kind must have been utilized, but oil lamps or torches would have invariably betrayed their use by smoke-stains. Did they know how to capture and harness the powers of electricity?

In connection with this existence of a highly developed civilization in ancient times, and its sudden disappearance, Professor L. Cipriani, a noted Italian scientist, read an

interesting paper before the British Association on September 30th, 1931, which described conditions precisely analogous to those which we have concluded prevailed in Egypt during the era immediately preceding and following the erection of the Great Pyramid.

He had been making investigations for some years in the Bantu area in Africa, where an ancient race of people still exists, and had come to the conclusion that they were the better-preserved remnants of a very evolved human type which in ancient times had a wide distribution in Africa. *This type disappeared almost completely from the Bantu area as a result of contact with other inferior African types*, and only in places where the contact was more difficult, by reason of geographical isolation or special habits, there remain the various so-called "islands" met with to-day. The original superior type *rapidly degenerated by contact with inferior types*, often by the system of buying wives, under which a rich group bought from an inferior one because the price was lower.

As to the country of origin of the dominant race of pre-Deluge days, both archæology and tradition place its habitat in Central Asia, and of the original Adamic civilization. There is, however, a body of opinion which traces it to the lost continent of Atlantis, the survivors from which carried their civilization to Europe and North Africa—via the Mediterranean

basin—in one direction, and to the American Continent in the other, the shape of the pyramids in Egypt and the *teocalli* (pyramids) of Mexico being traced to the sacred hill of Atlantis.

“Every great civilization has been distinguished by a very definite group of cultural and customary manifestations and practices, and the proof that the Atlantean civilization was so distinguished is fairly evident. From the shores of western Europe to those of eastern America a certain culture-complex is distributed, and is found on the intervening insular localities, while its manifestations are also to be discovered in great measure in North Africa and Egypt on the one hand, and in Mexico, Central America and Peru on the other. This culture-complex is so constant in the region alluded to that it is clear now a lost oceanic link formerly united its American and European extremities.”

“It is probable that the pyramid in Egypt and America is merely a later reminiscence of the sacred hill of Atlantis . . . Egyptian and American pyramids have thus a common evolutionary history. The idea must have sprung from a common centre. Both would appear to trace their descent from the sacred hill of Atlantis. Moreover, pyramids were to be found in the Canaries and the Antilles, the insular links in the chain between Europe and America, of which Atlantis is the missing link.”—*History of Atlantis*, by Lewis Spence.

Mr. Spence, in his *Problem of Atlantis* (chap. xiv, "Egyptian and American Comparisons"), makes the following additional observations on the similarities between Egyptian and Mexican pyramidal structures :

"The Mexican pyramids, like those of Egypt, had the same orientation towards the points of the compass, the line through the centres of the structures is roughly that of the astronomical meridian; both were built in grades or "steps," the difference in the case of the Egyptian being that the steps were filled in and the sides rendered smooth, though this was also frequently effected in Mexico and Central America. Both were used as places of sepulture [but qualified in the case of Egypt], and their interior arrangements are analogous. Waldeck found near Palenque two pyramids in a perfect state of preservation, square at the base, pointed at the top, their sides forming equilateral triangles. The pyramid of Teotihuacan has an opening 69 feet from its base, entering upon a gallery along which egress is only to be had by crawling on hands and knees. This extends inwards on an incline for a distance of 25 feet, and terminates in two sepulchral chambers, each 5 feet square. Lowenstein, describing this gallery, states that it is '157 feet long, increasing in height to over $6\frac{1}{2}$ feet as it penetrates the pyramid, the well is over 6 feet square, extending apparently to the base, and up to the summit. Other cross-galleries are blocked by debris.' This arrangement

is almost precisely similar to that of the interior of the Egyptian pyramid of Cheops.

"Is it possible to associate these structures with direct Egyptian influence? Assuredly it is not. They possess a character of their own which makes it certain they were not the result of Egyptian influence at first-hand. Moreover, it is clear that pyramid building in Egypt was not originally a thing Egyptian. Until the reign of King Zoser of the Third Dynasty, the tombs of the Egyptian kings were built of sun-dried bricks which lined pits in the ground or sand. The stone pyramid was undoubtedly introduced by a stone-using people . . . it was only when the . . . descendants of the Atlanteans entered Egypt that stone-building had its rise in that country. We see, then, that . . . we must look to a common centre for the origin of the pyramids of both countries rather than to Egypt as the place of its genesis" (pp. 179-180).

Dr. Churchward, in his *Signs and Symbols of Primordial Man*, also makes reference to the Mexican pyramid of Teotihuacan in connection with the Great Pyramid of Gizeh, confirming the above quotations from Mr. Lewis Spence.

"The pyramid of Teotihuacan, Mexico, has, at a point 69 feet from its base, an opening with a gallery large enough to admit a man crawling on hands and knees, which

extends inwards on an incline a distance of 25 feet, and terminates in two square wells or chambers, each 5 feet square and one 15 feet deep. . . . The gallery is 157 feet long, increasing in height to $6\frac{1}{2}$ feet as it penetrates the pyramid, extending (apparently) down to its base and up to the summit; other cross galleries are blocked with stones, and the well is over 6 feet sq. (Tank of Flame). [Compare the Subterranean Pit in the Great Pyramid, designated in the "Book of the Dead" as the "Place of the Central Fire."] Nothing is mentioned about the form of entrance to this Pyramid, but from the meagre details it is evidently a copy of the Great Pyramid of Egypt with the details of their Eschatology written here also in stone.

"One point which impresses itself on the author is that the external measurements differ, so far as we can ascertain, but the site chosen is the same—the line through the centre of the structure is in the astronomical meridian, and the buildings are oriented with slight variation. The construction in steps [i.e. the core masonry of the Great Pyramid] is the same. This points to the fact that the Mexicans copied the Great Pyramid" (p. 377).

Regarding the reference above by Mr. Spence to the first appearance of stone in building construction in Egypt, Sir Flinders Petrie says: "At the beginning of the Third Dynasty an entirely new spirit appears. The second King [Zoser] began a gigantic tomb,

with some of the finest granite-work; this totally outdid all the brick tombs, not a third of the size, which royalty had hitherto used. It was the beginning of the grand Pyramid age."

Petrie's reference here to the finest granite work far larger than any of the earlier brick tombs clearly implies that, for the first time in Egyptian history, large stone masonry construction was being attempted on the ambitious scale eventually reached in the Great Pyramid, and confirming Mr. Spence's conclusion that stone building was introduced into Egypt from outside—by those responsible for the Great Pyramid age. This age lasted approximately four centuries—beginning with the Third Dynasty and ending with the Sixth—2725 B.C. to 2315 B.C.—though its supreme achievement—the Great Pyramid of Khufu—appeared at the close of its first century only.

As soon as the Great Pyramid was finished, workmanship began to deteriorate, and the high standard then attained failed to be maintained, successive pyramids not only falling off in workmanship, but also diminishing rapidly in size, as shown in the Third and succeeding pyramids of Gizeh, the Second being in course of erection before the First was completed.

After the close of the Sixth Dynasty there followed a long gap in pyramid building, due to foreign invasion and occupation, and pyramid construction was not resumed till the

Twelfth Dynasty (2036 B.C.), definitely ceasing two centuries later. The pyramids of this final era of pyramid building reverted back to the early native use of sun-dried mud-bricks, but faced with stone, a kind of faint echo of the great days of the true Pyramid-builders.

While Mr. Spence traces the pyramids of Egypt and America to a common origin in Atlantis, the survivors thereof forming two distinct streams, one east to the Mediterranean and North Africa, the other westwards to the continent of Central and South America, we would rather place the cradle of this civilizing race in Central Asia from whence colonies migrated to Egypt and North Africa, and eventually to America; that is, travelling westwards all the time (just as modern colonization has done) and taking in Atlantis (admitting for the moment such a country had a real existence in pre-Deluge times, and this is quite possible) on the way.

"Recent research," remarks Mr. Spence (*Problem of Atlantis*, p. 163), "has made it abundantly clear that the civilization of Egypt and America sprang from one common source. The intimate resemblance between the two cultures has led to the formation of an hypothesis on the part of the school of Professor G. Elliot Smith, that the Egyptian influence of the Pyramid era circled the world by way of the Pacific and thus reached America."

Professor Elliot Smith thus traces an eastward route on the part of this early culture, but the present writer agrees with Mr. Spence that "if Egyptian civilization reached America, it did so by a more direct route than via Asia."

It is a remarkable fact—proving the widespread nature of this early culture—that in ancient Mexico and Peru, and in many of the widely-scattered islands of the Pacific (Spence), we find huge monolithic constructions put together with a skill in some cases surpassing even that displayed in the Great Pyramid, and often consisting of stones far larger, thus indicating the influence of some exceptionally skilled race.

Probably the most remarkable remains of this nature are those of Cuzco, in Peru, which, being built on hills, like Rome, required terracing to form level platforms on which its buildings could be erected, these terraces being upheld by huge stones of irregular sizes, but fitting into one another with great accuracy. "Those which bear up the terrace of the palace of Rocca," Mr. Spence informs his readers (*Problem of Atlantis*), "weigh, many of them, several tons each, and are as hard as granite, yet so finely are they fitted that it is said a penknife-blade cannot be introduced between them. One of them, the famous 'Stone of Twelve Angles' is met on each of its dozen sides by another stone, into all of

which this fits exactly. In all of these massive walls there is absolutely no cement, the stones holding together by reason of the marvellous accuracy with which their superficies meet one another. Some authorities give it as their opinion that the Peruvian masonry is unequalled on the face of the globe for finish, and that the finest needle could not be introduced between the stones which compose some of the walls of Cuzco"—a refinement only equalled in the casing stones of the Great Pyramid of Egypt, which, however, are of smaller size, large as many of them were.

"By whom," asks Harold Bayley in his *Archaic England*, "was the Titanic art of Cromlech-building brought alike to the British Isles and to the distant islands of the Pacific? By what guidance did frail barques compass such terrifying sea-space? How were these adequately victualled for such voyages, and why were the mainlands ever quitted? How and why were the colossal stones of Stonehenge brought by ship from afar, floated down the broad waters of the prehistoric Avon, and dragged laboriously over the heights of Oare Hill? Who were the engineers who constructed artificial rocking-stones and skilfully poised them where they stand to-day? To suspend a stupendous mass of abnormous shape in such an equilibrium that it shall oscillate with the most trivial force and not fall with the greatest, is a problem unsolved so far as I know by modern engineers."

A reasonable explanation of such evidence as the foregoing respecting the engineering and other skill found scattered over the ancient world, seems to be that it was due to a highly endowed race which colonized the world of those days as the Anglo-Saxon race has done in the modern world, and Professor Sayce, in his analysis of the tenth chapter of Genesis in his *Higher Criticism and the Monuments*, shows this was a white race, of Adamic descent, *and therefore the parent of modern white civilization.*

The first migration of this race is given in Gen. iv. 16-24, and its initial development. Genesis also clearly implies that the "creation" of Adam represented the start of a civilization, endowed from the beginning with attainments far above those of other races, and indeed probably more advanced in some respects (the Great Pyramid, to mention but one instance, proves this) than our present-day knowledge is.* By migration they spread their culture to other less developed races, but at the expense of their own civilization, clearly indicated in Gen. vi. 1-4. Union with inferior races ("the daughters of men") naturally tended to a falling off in ability and a retrograding to an

* Marsham Adams, himself a fellow of New College, Oxford, rightly pours scorn on "the schoolboy scholarship so predominant at our universities, which cannot imagine any conception of antiquity originating except in Greece."

inferior and lower type, eventually leading to extinction, as in the instance given by Professor Cipriani above (p. 100). The Deluge of Noah was the seismic disaster which engulfed the original home, or "growing point," of this original civilization, and therefore did not affect those colonies thereof established outside that region amongst the other races of mankind.

Early Babylonian, Chinese, Persian, and Indian traditions all place the geographical location of the Deluge of Genesis in Central Asia, now marked by the great Tarim Basin, formerly—and within even historical times—the site of a freshwater sea. It seems not at all unlikely that the "wandering lake" of Lop-Nor, in this same region—Eastern Turkestan—described by the famous explorer, Sven Hedin, in his book *Across the Gobi Desert* (Routledge, 1931), is the remnant of this vast inland Asian Mediterranean sea. It lies "half-forgotten, difficult of access, at a greater distance from all seas than any other lake of the earth, shut in by mighty mountain ranges, and travelling from one part of its desert bed to another."

The narrative of Genesis makes it clear that, following the expulsion from Eden (an expression denoting a compulsory migration of the race *eastwards* from its original habitat—*eastwards*, since it was *from* the east it was prevented from returning (Gen. iii. 24), the

Adamic race was not only separated from the rest of humanity, but was exiled to a region where no other human beings existed ("there was not a man to till the ground" Gen. ii. 5), and where only unremitting toil would produce a bare means of sustenance ("in the sweat of thy face shalt thou eat bread," Gen. iii. 19).

Precisely such a locality is that described above by Sven Hedin, the great Tarim Basin of East Turkestan—"half-forgotten, difficult of access . . . shut in by mighty mountain ranges"—a region the physical state of which to-day points unmistakably to its having at one time undergone just such a catastrophe as the disaster described in Gen. vii. 11-12.

In this connection it is interesting to note—and, indeed, curious, yet significant—that, according to Maspero's reconstruction of the "world" of the ancient Chaldeans and Egyptians (refer chart 23 in Davidson's *Early Egypt and Babylonia*), their ideas of it were not such as could possibly have originated in either of these countries themselves (since their physical characteristics are entirely different), but, on the other hand, represented it precisely like the mountain-encircled, land-locked area of the Tarim Basin in Eastern Turkestan—the *original habitat of the Adamic race*.

That this was the case has now been confirmed by recent archæological research on the part of Dr. Chapman Andrews, leader of an

expedition organized by the American Museum of Natural History, to the Great Desert of Gobi about ten years ago. The discoveries then made confirmed the predictions of Professor Osborn, President of the Museum, twenty-five years previously, *that Central Asia would prove to be the original home of the human race*, and also of the other higher vertebrates.

All the great constructional work of the first five Egyptian Dynasties—which includes the era of the Great Pyramid builders—was anterior to the Deluge of Noah, and coloured plaster-work of this epoch still stands intact as evidence that it had never been under a flood (Davidson). The earliest known Egyptian record, also, of the Noachian Flood is dated 200 years *after* it occurred, while it actually fell during the reign of Pepi II, of the Sixth Dynasty, without it being known in Egypt or affecting that country physically at the time, or historically till much later. No record of the Deluge reached Egypt till the time of the Ninth Dynasty, when it was known as the “Destruction of Mankind,” and was located in a region *remote from Egypt*. It was not till a much later Dynasty—the Nineteenth—that the version of “The Destruction of Mankind,” *in the form it then took*, traditionally placed the Deluge in Egypt.

We have so far in this chapter now established two facts respecting the origin of the Great Pyramid: Firstly, that it was due to a band of colonists who belonged to the Adamic civilization, and organized its construction by the Egyptians under their supervision and guidance, this civilization being technically and morally much in advance of all contemporary civilizations, and one that has left its mark over widely-separated regions of the ancient world.* Secondly, that the Pyramid was erected long before the Noachian Flood.

Regarding its pre-Deluge date, we have quoted above (Chap. III, p. 85) a Coptic tradition stating it was built as the result of a vision that appeared to King Surid "300 years previous to the Flood," and co-ordination of the known regnal years of Khufu, in whose reign it was completed, with the data given

* To this fact is no doubt due the ascription by Diodorus to the Egyptians of the claim that they had sent out colonies over the whole world in times of the greatest antiquity, had taught the Babylonians astronomy, and that Belus and his subjects were a colony that went out of Egypt. Diodorus also tells us "he was greatly impressed with the assertions of the priests respecting the numerous emigrations, including the colonies of Babylon and Greece, but they named so many in divers parts of the world that he shrank from recording them upon hearsay and word of mouth." (Churchward, p. 283).

in Genesis regarding the time of this visitation agree with this tradition.*

Respecting the origin of the builders of the Pyramid, the most interesting account is that left by Josephus (first century A.D.). In his *Antiquities of the Jews*, Book I, chap. II, par. 3, he says:—

“[The *Descendants* of Seth] were the inventors of that peculiar sort of wisdom which is concerned with the heavenly bodies, and their order [i.e. astronomy]. And that their inventions might not be lost before they were sufficiently known, upon Adam’s prediction that the world was to be destroyed . . . they made two pillars; the one of brick, the other of stone; they inscribed their discoveries on them both, that in case the pillar of brick should be destroyed, the pillar of stone might remain, and exhibit these discoveries to mankind. . . . Now this [the pillar of stone] remains in the land of Siriad [Egypt] to this day.”

Whiston, the translator of Josephus, remarks in a footnote on the foregoing passage that the latter, in attributing the Pyramid to the Sethites, is evidently taking Seth as the

* Date of the Deluge, 2344-2343 B.C. Reign of Khufu, 2645 to 2622 B.C. Difference of epochs—300 years (refer the writer’s *True Bible Chronology* (Routledge) Chap. II).

equivalent of the Egyptian Sesostris, or *Sisithrus* (= the Babylonian Xisuthrus). Josephus, therefore, has evidently based his connection of the Pyramid with the Sethites of the Adamic civilization upon the similar tradition of the ancient Sabeans—derived from Hermes (=Egyptian Thoth)—supposed to be a descendant of Seth, who maintain that “Enoch, foreseeing the destruction of the Earth, had inscribed the science of astronomy upon two pillars” (Vyse).

This Enoch of tradition was a composite character, combining in one person the characteristics of Noah and of the Enoch of Genesis. Like the former he was saved from a flood in an ark, and like the latter “was translated to live with the gods” (Berosus, the Chaldean priest-historian, of the third century B.C.), a confusion which is explained on reference to the Ethiopian version of the apocryphal *Book of Enoch* which places the incidents of the life of Noah as taking place in that of Enoch.*

We have, therefore, in these traditions definite identification of the Great Pyramid

* There are two apocryphal “Books of Enoch,” one known as *The Ethiopian Book of Enoch*, and the other as *The Book of the Secrets of Enoch*, or, alternatively, *The Slavonic Book of Enoch*, these designations having reference to the origin and language of the original MSS. The Ethiopian version is the most complete.

with the *descendants* of Seth,* with Enoch and with Noah, Enoch being included because of a confusion of details.† Eliminating, therefore, the purely traditional elements associating the Great Pyramid with Enoch, we find that it was built during the epoch of the House of Noah by migrating representatives thereof, while the parent House flourished in Central Asia, as a result of a vision revealed to a member thereof 300 years before the calamity that brought that civilization in Central Asia to an end. Now the Dynasty, or House, of Noah flourished from 2944 to 1994 B.C., within which epoch falls the time of the Pyramid's construction (2645-2625 B.C.), the end of the Dynasty being given as the "death" of Noah at the "age" (i.e. after the duration) of 950 years (refer *True Bible Chronology*, p. 21), the

* We emphasize *descendants* because, on the strength of Josephus, many are wont to attribute the Great Pyramid to Seth himself. The dynasty of Seth, however, 3870-2958 B.C., was by several centuries anterior to the epoch of the Pyramid's construction.

† This traditional connection of Enoch with the Great Pyramid is referred to by the Arab writer, Ibn Batuta, who says: "The pyramids (Great and Second) were constructed by Hermes, *the same person as Enoch*, to preserve the arts and sciences and other intelligence during the Flood." Another Arab author, Abou Balkhi, relates a similar tradition, that "The wise men previous to the Flood, foreseeing an impending judgment from Heaven, built . . . in Upper Egypt many pyramids of stone, in order to have some refuge against the approaching calamity" (Seiss).

House of Noah being carried on in its new habitat 350 years after the Flood.

This connection of the Dynasty of Noah with the Great Pyramid is shown in the tradition referred to by the Arab writer Murtadi that "Khnum-Khufu, the builder of the (Great) Pyramid, *lived in it with Noah*" (Massey).

Manetho (third century B.C.), the Egyptian priest-historian, is quoted by Josephus (*Against Apion*, Book I, section 14) as giving an account very similar to that of Diodorus and Herodotus respecting the era of the Pyramid Kings, to the effect that "in the time of a king, whose name was Timaus . . . there came up *from the East*, in a strange manner, men of an ignoble race [a calumny like that repeated to Herodotus, and invented for the same reason—refer Chap. III above, p. 75], who had the confidence to invade our country, and easily subdue it without a battle. And when they had our rulers in their hands, they demolished the temples of the gods"—a description applicable either to the Great Pyramid Kings or to the much later Hyksos Dynasty—probably, as already explained, a confusion of both epochs.

Manetho also adds, "Some say they were Arabians," and that they eventually quitted Egypt, with all their families and effects [as did the colonists responsible for the Great and Second Pyramids on completion of these

structures], a statement that accords with that quoted above from Sir Ernest Budge that, following the Fourth Dynasty, a decay set in owing to the withdrawal of these colonists.

To summarize the conclusions so far arrived at respecting the Great Pyramid and its Builder, we may set them out as follows:—

It owes its *design* to *one* man (Petrie), the plans themselves probably being in existence long before actual construction commenced, confirmed by tradition which attributes them to Iemhotep, of the time of Zoser, a Third Dynasty king (2707-2688 B.C.), to Philitis (Herodotus), to Sheddad-ben-Ad (Arabian), obviously the same person under different names according to the origin of the tradition.

This individual belonged to the Adamic (white) civilization—endowed with moral, scientific and cultural attainments far in advance of all other contemporary civilizations—and was the leader of a band of immigrant colonists from the original habitat of this civilization in Central Asia. These colonists entered Egypt peaceably [“There came up *from the East*, men . . . who invaded our country and *easily subdued it without a battle*.”—Manetho], and organized the building of the Great Pyramid, after carrying out earlier experimental work in order to train the

native labour to the necessary degree of manual skill.

Being of the Adamic race and monotheists, they eschewed paganism and suppressed the heathenism of the Egyptians ["demolished the temples of the gods" (Manetho), a statement exaggerated by religious bias, and obviously confused with the acts of the much later Hyksos Dynasty, which did destroy their temples], an act which seems strongly referred to in a Hindoo tradition (quoted by Seiss) to the effect that "a wise and devout man . . . came into Egypt with a chosen company and, without any declaration of war [compare Manetho's similar statement—'without a battle'], began to administer justice amongst the people and give them a good king." This tradition also describes them as coming from Asia and being great colonizers, precisely as we have described the early civilization responsible for the Great Pyramid.

CHAPTER V

SOME MODERN THEORIES

The Biblical Theory of Piazzzi Smyth.

Its Critics. Considerations they overlook.

Mathematical Basis of the Pyramid's Chronograph.

Astrology and the Great Pyramid.

Origin of Egyptian Measures.

The Earth's Polar diameter the only true standard of length.

The Pyramid (or Primitive) inch.

Scientific Knowledge of the Parent Civilization.

Antiquity of the Inch as a metrological unit.

The Abbé Moreux supports the thesis of Smyth.

A dictum of Sir John Herschel.

The (so-called) "Builder's Error" in the Pyramid's Base.

A practical object lesson.

The Pyramid's "Displacement Factor" and its Application.

ADDENDUM—Lost Faculties of the Adamic Civilization.

"Every student who enters upon a scientific pursuit . . . will find not only that he has much to learn, but much also to unlearn. As a first preparation, therefore, . . . he must loosen his hold on all crude and hastily adopted notions, and must strengthen himself, by something of an effort and a resolve, for the unprejudiced admission of any conclusion which shall appear to be supported by careful observation and logical argument, even should it prove of a nature adverse to notions he may have previously formed for himself, or taken up, without examination, on the credit of others. Such an effort is, in fact, a commencement of that intellectual discipline which forms one of the most important ends of all science."

SIR JOHN HERSCHEL.

CHAPTER V

SOME MODERN THEORIES

WE have mentioned in our opening chapter that modern study of the Great Pyramid virtually dates from the investigations, made between seventy and seventy-five years ago, of Piazzzi Smyth, the Astronomer, and John Taylor, these two being practically the first to make any serious attack upon the Tombic Theory, which, till then, had virtually held the field.

Briefly, this theory, termed by some the Biblical Theory, maintains that the Pyramid's internal system of passages and chambers constitutes, in the form of a graph or geometrical diagram, a chronologic record of human history over a period of 6,000 years—the era of the Adamic civilization—running parallel with the same record revealed in the Bible, the unit of measurement in this diagram being an inch to a year, the structural changes in these passages denoting epoch-making events in world-history.

The theory has, of course, been hotly assailed, as anything is that is considered unorthodox, the reasons varying with the mentality and outlook of its critics. The

sceptic will consider the idea so improbable from the start as to be dismissed from any further consideration. A great deal of the Bible, however, might be—in fact is by a certain type of extreme critic—dismissed for the same reason. It is, however, surely just as reasonable, it may be fairly (and logically) claimed, for a record of future history to be embodied in a diagrammatic form, geometrically expressed in the lines of a building, as it is for a similar record to be committed to writing, as has been done in the Bible. *And history has proved, so far as it has gone, the truth of this record in both instances*, a fact conveniently overlooked by sceptics, or plausibly explained away as mere coincidence.

Another taunt levelled at this thesis of Professor Smyth is that “pyramidology from Taylor, through Piazzzi Smyth, right down to the present, has been one long process of accommodating the data to the facts otherwise known”—owing to the fact that certain statements of these two investigators are not accepted to-day.

This criticism overlooks certain important considerations.

Firstly: That Smyth unfortunately saddled his thesis with corollaries and side-issues rightly considered by his scientific contemporaries as fallacious.

Secondly: Taylor and Smyth were pioneers in this particular application of the Great

Pyramid, and naturally were ignorant of facts and data concerning that structure which have since come to light, particularly the evidence from ancient Egyptian literature. The conclusions, however, which they reached were, in view of the knowledge of that day, nearly three-quarters of a century ago, perfectly justifiable, if not actually obvious. To argue that the theory is merely a "process of accommodation" as further facts have become known implies that investigators of an earlier generation should be in possession of data which only come to light as the result of later research. Apply this argument to any other field of research—medicine, for example, or mechanical engineering—and its weakness at once becomes apparent.

Thirdly: This geometrical diagram embodied in the Great Pyramid is purposely expressed in such a way, viz., in the modern graphical methods known to engineers as "graphic statics"—(note our statement above that the Pyramid is essentially an engineering construction)—that it was not intended it should be properly understood and interpreted until a certain era had been reached. The history of pyramidology has borne this intention out. Only since the present twentieth century commenced has sufficient been discovered to enable its science and the facts embodied therein to be correctly formulated. Had Professor Smyth and other

investigators of his day been in possession of the clues which we now have, or had they understood the true geometrical basis underlying the representation of the Pyramid's science (as explained above in Chapter II), they would have discovered the same facts as have now come to light.

Others, again, while accepting this chronologic theory, have failed to grasp the scientific principles underlying it, or the correct methods employed in its representation. They have, in consequence, arrived at no very clear conclusions respecting it, or else have attempted to find agreement therein with some preconceived idea; with the result that diverse and even contradictory conclusions have been made, which naturally have been seized upon by critics to disparage the whole theory.

Critics in fact, as far as this particular theory of the Great Pyramid is concerned, have treated all exponents of it alike, and tarred all with the same brush, making little or no distinction between those who approach the subject on a strictly scientific—and *therefore definitely provable*—basis, and others who do not follow these principles, but base their findings on arbitrary assumptions.*

* The present writer feels it necessary to emphasize this point because, in a recent volume on the Great Pyramid, he has been unfairly criticized, and a totally wrong impression given of his statements by their being taken out of their context and inserted amongst those of

In this connection we think it appropriate to repeat the following extract from our pamphlet, *Great Pyramid and Current Events* (December, 1929):—

“Those who attempt to explain Pyramid chronology except upon *mathematical principles* will find themselves astray. It is

other writers, with whom, however, he disagrees, and has stated so in his own writings.

In order to disparage the subject, the author of this work quotes passages from the *Witness of the Great Pyramid* (second edition), to inform his readers, on our authority, that, unless the “Second Coming” takes place, *at the latest*, by September 15, 1936, the whole theory of the Great Pyramid will have been proved wrong.

In neither of the passages quoted, however, do the words, “Second Coming” even occur, and so far from stating that the above date is that of the Second Coming (as many, however, appear to consider), we have always *warned against* this fixing of events beforehand on to Pyramid dates, a warning which still seems very necessary.

What we *have* stated is that “certain momentous events [not one, but many] are to happen *previous* to that date [September 15, 1936],” and that “the Pyramid warns us these events are to take place between May 29, 1928, and September 15, 1936.” Our critic has *assumed*, for his own purpose, that “momentous events” and the “Second Coming” are here used as synonymous terms.

On the other hand, as any unbiassed person will admit, this forecast (written previous to May, 1928), has turned out—as one of our readers has put it—“disastrously accurate.” Sufficient “momentous events” in the realm of human affairs and in nature, such as have reduced the world to a condition more precarious than at any other time, have taken place during the past seven years, to fulfil this forecast many times over, while current political happenings point unmistakably to a climax approaching.

useless, for example, to fix arbitrarily on some particular point in the Great Pyramid (as, for instance, the commencement of the Grand Gallery, which many appear to select as a datum)* as representing a certain date, to take measurements from that point to others to obtain equivalent dates, and then to claim that the dates so found are correct. Such procedure cannot produce the results claimed for it: firstly because the method is wrong in itself; and secondly because it is not sufficiently accurate,† even supposing the initial date is correct in the first instance. Yet many who follow this process of assumption, and at the same time

* This was the procedure followed by Piazzzi Smyth, and was quite a reasonable one in view of the fact that he had no other clearly defined datum to start from, the correct mathematical and astronomical data not having been discovered in his day. We are indebted to Mr. Davidson for this discovery. It is, however, strange, to say the least, that many present-day investigators still follow Smyth's procedure, in spite of the unscientific nature of such, and the fact that the true scientific, geometrical method has now been well established. Critics, as pointed out above, naturally seize upon this discrepancy of procedure to disparage the whole subject, making no discrimination between the correct and incorrect.

† This is an important point to bear in mind since critics are very ready to demolish the theory on the strength of measurements which they themselves have taken at the Pyramid itself, and have found they do not precisely agree with the geometrically and mathematically-derived figures (a point we have already drawn attention to when dealing with the geometry of the Pyramid) upon which the scientific and other features of the Pyramid are based.

appear to have no geometrical basis for their measurements, nor any acquaintance with astronomy—or at least do not take it into account—claim to determine as the *terminal* dates of the Pyramid's chronology (1914-1953), the *same* dates as are deduced scientifically from its astronomical and geometrical data, notwithstanding also that their arbitrarily fixed basal dates differ from the true astronomically-defined dates of the Pyramid's system. No really intelligent person, least of all one scientifically minded, can but regard such methods as suspect."

It is because the Great Pyramid's chronograph is founded on the mathematical sciences that the dates therein can be determined with exactitude, though sceptics still make assertions to the contrary, usually because these dates do not happen to agree with their particular theories. And if it be asserted that anything can be proved by mathematics, this is only true when the laws and principles thereof are not adhered to when employing this science in the solution of any problem. The person who disregards these principles will eventually find himself in a tangle of paradoxes, and such is usually the fate of those who attempt to interpret the Great Pyramid's chronograph of history on any basis except a strictly mathematical and geometrical one.

Such also happens to those who endeavour to supplement elucidation of the Great

Pyramid from extraneous sources, amongst which astrology appears to be one of the most favoured. Proctor (*see* Chap. VI below) has by no means been alone in attempting to "build a pyramid of sand by the aid of a Zadkiel trowel and astrological mortar," and has had many followers since.

These attempts to find in astrology a key to the Great Pyramid are due, no doubt, to the confusion of astrology with astronomy, and because the Great Pyramid's chronograph has an astronomical basis. Astrology, which is of extreme antiquity, was originally a comprehensive term for the study, both of the movements of the heavenly bodies and of their supposed influence on human and terrestrial affairs. To-day it has only the latter meaning, astronomy having taken its place with regard to the former. With Newton, astronomy emerged from mystery and became a true science, and the sun and stars were no longer viewed, in the eyes of astronomers, as rulers of destiny.

One of the main avenues of attack made upon the scientific and chronological thesis of Piazzzi Smyth and the present day exponents thereof, is in the assertion that the units in which these features are set out—the Pyramid cubit, and its 25th part, the Pyramid inch—have been *invented* to suit the thesis, the ground of this assertion being that these are

not the measures used—or found—in details of construction, the actual measure used being the Egyptian “common” cubit of 20·63 British inches.

The explanation, however, is not difficult in view of what we have said above respecting the origin of the Pyramid, and will be obvious enough to the unprejudiced mind.

The Great Pyramid having been erected under the supervision of a band of highly-skilled colonists, it was necessary to devise a system which the Egyptian workmen could themselves use under the occasional direction of their overseers, and would not require mathematical calculations to apply. Now since the metrological system of these colonists was based on the year-circle (refer Chap. II above), this would involve the use of the incommensurable number denoted by π : they had therefore to devise a system which would eliminate its use. When, therefore, the scientific, earth-commensurable, metrology of the Adamic civilization was introduced into the external world by its colonists, it was reduced to an accurate, but “rule of thumb,” system of equivalents. *In the case of the Great Pyramid, the method of reduction employed is defined in the structure itself.*

This startling and significant fact (never mentioned or alluded to by prejudiced critics) was actually discovered by Piazzzi Smyth in his survey of the Pyramid seventy years ago

*though he himself did not realize it at the time, Mr. Davidson being the first to publish it as a result of his examination of Smyth's and Petrie's surveys (refer No. 4 of his *Talks on the Great Pyramid*, art. "Ancient Egyptian Measures," published 1926).*

An outstanding feature of the Great Pyramid, even when seen from a distance, is the 35th course of masonry, which, owing to its much greater depth compared to the courses immediately above and below it, is very conspicuous. Now Smyth inferred from the value of the slope of the Pyramid's face and the vertical distance of this 35th course above the base, that a rectangle 3652'42 Pyramid inches long (the circumferential measure of the year-circle) by 1162'6 Pyramid inches high (diameter of same circle) was intended to be represented between the base and this outstanding masonry course.*

* In connection with this 35th course, so important in the metrology of the Great Pyramid, the writer has been asked, "Had the Pyramid not been stripped of its casing-stones, this course would never have been observed. How, then, would its significance have been discovered?"

Though the casing-stones would have been of the same depth as the core-masonry against which they backed, and would therefore have indicated the same geometrical feature, which Smyth observed, owing to the fineness of the joints in them, which made each face of the Pyramid appear as a single unbroken surface, this feature would have been invisible to all ordinary observation. The only conclusion to be drawn, therefore, is that this indication, in the form in which it is given, implies on

The longer side of Smyth's rectangle, therefore, represented the circumference, on the scale of ten inches to a day, of the year-circle which formed the metrological basis of the Adamic civilization, while the shorter side represented its diameter. By converting this rectangle into a *square* of equal area, and dividing the side of this square (2060·66 Pyramid inches) into 100 parts, was obtained the length of the Egyptian *common* cubit (20·63 British inches) used in the actual construction of the Pyramid.

It was this square, also, which formed the ancient Egyptian unit of square measure, the *aroura*, the side of which Herodotus states contained 100 Egyptian *common* cubits, the length of the latter being, according to Sir

the part of its divinely-guided architect—and it should be remembered that the original Adamic civilization, to which we owe the Pyramid, undoubtedly possessed faculties long since lost to the human race, of which ability to foresee the future was undoubtedly one (hence the tradition, quoted by Josephus in connection with the Sethites, of Adam's prediction of the Flood)—fore-knowledge of the destruction of the Pyramid's originally perfect fitting casing-stones; as likewise it also implies fore-knowledge of a forced entry, since the knowledge of the true entrance became lost, and exploration of the interior was prevented by the granite plug cutting off access to the upper passages and chambers. Without such a forced entry—since no other provision was made—knowledge of the Pyramid's interior and its purpose would have remained a secret for all time, apart from what can be gleaned from external sources, such as the ancient "Book of the Dead" (*see* ADDENDUM to Chap. V).

Flinders Petrie, precisely 20·63 British inches. Smyth, consequently, discovered in the rectangle thus geometrically defined in the Great Pyramid the origin of the ordinary Egyptian unit of linear measure, the cubit of 20·63 British inches, and also the unit of square measure, the *aroura*, without realizing he had done so.

To establish a permanent, unvarying unit, upon which to base their "year-circle," the original civilization adopted the one and only standard available—the earth's *Polar diameter*. Owing to the fact that the earth is not a true sphere, "circles" on its surface (such as the defective Continental metre is based upon),* passing through the Poles, are not true circles, but vary in circuit all round the earth's surface. For this reason, for the irregularly shaped geoid of our planet (i.e., "earth-like," to express the fact that it cannot be defined by reference to any other solid, just as a pear can only be described as "pear-shaped") is substituted a nearly equivalent "ellipsoid of revolution." In this way the mean Polar diameter, the only constant standard of distance common to all nations,

* The metre was originally defined as the ten-millionth part of the length of the meridian arc from Pole to Equator, which passes through Paris. It has subsequently been discovered that it is a fraction short of this length, and is therefore purely a conventional unit.

adopted for the "International Spheroid of Reference," in 1924, is taken as 7,900 miles, or 500,544,000 British inches, a difference of but 500 feet from the value adopted by the Adamic civilization of 500 million "primitive," or Polar diameter inches, equivalent to 500,550,000 British inches.

For their larger unit of measure—the cubit—they took a length of 25 such inches, which is precisely the one ten-millionth part of the semi-polar axis of the earth; or (what is the same thing) of the radius of the earth at the North Pole.* It is therefore the most scientific and serviceable (because earth-com-mensurable) unit of measurement available, since it is the only one that remains unchanged for thousands of years. It is this cubit of 25 inches in which (or in parts thereof) all the scientific, mathematical and other formulæ of the Great Pyramid are expressed,† but it is not found in its actual, physical, construction. Hence the refusal of sceptics, who base their contentions upon examination

* This is merely expressing in another way the fact that the Polar diameter consists of 500 million Pyramid inches.

Polar diameter equals 500,000,000 inches. Semi-polar diameter (or radius) = 250,000,000 inches. Cubit = 25 Pyramid inches. Therefore number of cubits in semi-polar diameter = $\frac{250,000,000}{25} = 10,000,000$.

† Thus, for example, the length of the base-side in *cubits* is equivalent to the number of days in the solar year.

of the Pyramid itself, to acknowledge the existence of such a cubit. *They look for it where the builder did not intend to reveal it.*

To state an analogous illustration from modern times, the Great Pyramid was erected in the same manner as an engineering structure designed by a British engineer for erection in a foreign country. He would work out all the details in feet and inches and draw up his plans therefrom, afterwards reducing the dimensions to their equivalents used in the country where it was to be erected. In the past much trade was lost to this country in engineering and technical products owing to the refusal of the manufacturer to give particulars except in British terms, which were unfamiliar to the foreigner only acquainted with the metric system. Fortunately, manufacturers to-day realize the shortsightedness of this policy, which competition in the world's markets has obliged them to revise.

From the foregoing certain highly interesting and significant facts emerge.

Firstly, that the original Adamic civilization knew with an accuracy, only approached in this twentieth century, the true shape of the earth and its polar diameter, in conjunction with a true knowledge of the solar year, and other astronomical data respecting the earth as a member of the solar system (explained in detail in our *Witness of the Great Pyramid*);

knowledge which modern scientists have only reached by centuries of effort and a vast expenditure of money. "We have spent centuries in labours and concurrent efforts," writes the distinguished mathematician and astronomer, the Abbé Moreux; "perfected our technique; continued with slow perseverance the task of our predecessors; pushed to an unimaginable point the exactness of our calculations, only to end finally in discovering what was known 4,000 years ago."

It is thus clear that the disaster which swept away this civilization, with all its monuments and records, with the sole exception of the Great Pyramid, literally put the world back thousands of years, since the knowledge available at that distant epoch was not only equal to present-day science, but many things were known which are still beyond our comprehension. It proves, what Scripture tells us, that man (of the Adamic race) was created only a little lower than the angels (Heb. ii. 7), and what geology and archæology also proves: that *man's earliest days were his best* (Sir James Dawson, geologist). It is interesting to try and imagine what would have been the state of the world in this twentieth century A.D. had this disaster not overtaken it four thousand years ago.

The metrology of this original civilization

shows it knew better how to establish an unchanging basic unit of measurement than European scientists until well into the nineteenth century. Thus the French metre, invented by atheistic scientists during the last decade of the eighteenth century, and supposed by them to be ultra-scientific, as a unit of measure represents an error of nearly a mile and three-quarters in its estimate of the length of the earth's polar diameter, compared to the practically negligible one of 500 ft. to-day, and the precise value 4,000 to 5,000 years ago.*

Another fact that emerges is that the inch is the oldest metrological unit of length in the world, and has come down to us in the present British inch with a loss of but a thousandth part (1,000 Pyramid inches = 1,001 British inches), an amount so insignificant as to be negligible for all ordinary

* In connection with the invention of the continental metre at the time of the French Revolution, Dr. Seiss mentions an interesting fact that M. Callet, a French mathematician, in his book on *Logarithms* (1795), suggested that, instead of being based upon the curved meridian arc (see footnote above at p. 134), it should be the ten-millionth part of the earth's Polar axis as a standard of length, a suggestion truly scientific, and far in advance of the modern science of that day. Sir John Herschel pronounced the metre as "the newest and worst measure in the world," remarking that so long as the human mind retains a power of geometry, the earth's Polar axis will always be regarded as of far greater importance than its irregularly curved surface.

purposes, and so trifling as to be obvious, except to the wilfully prejudiced, that it and the Polar inch are of a common origin. And it is clear, also, that this minute difference is simply due to the passage of time, and to the fact that for long periods we had no proper standards of reference, in spite of the fact that, down to 1824, innumerable Acts of Parliament had been enacted at various times to promote uniformity in our measures, but, from one reason and another, failed of their purpose. In our inch, therefore, used solely by the English-speaking peoples, there is a very real connection between ourselves and the original builders of the Great Pyramid.

We have quoted above from the noted French astronomer, the Abbé Moreux, who, a few years ago, published his *Mysterious Science of the Pharaohs*, based upon the earlier investigations of that other astronomer, Piazzi Smyth. He confirms absolutely Smyth's thesis regarding the use of the Polar inch and cubit of 25 such inches by the builders of the Great Pyramid, and the astronomical and the other scientific facts monumentalized therein by these measures. This testimony is exceedingly valuable, coming as it does from a distinguished mathematician, and therefore a complete answer to those who, in order to disparage the subject, assert Smyth invented these units to uphold his theory;

and also because the Abbé belongs to a nation which uses an entirely different system of metrology, and might therefore quite legitimately look with suspicion on any thesis involving the application of a unit used by another country.

The Abbé's confirmation of Smyth, in fact, is an excellent comment upon the dictum of Sir John Herschel to the effect that, "the surest and best characteristic of a well-founded induction is when verification of it springs up from quarters where it might least be expected. Evidence of this kind is irresistible, and compels assent with a weight that scarcely any other possesses" (*Natural Philosophy*).

We have mentioned above (footnote, p. 135) that the number of cubits in the Pyramid's base-side is equivalent to the number of days in the solar year ($365\cdot242$); or, to express the same fact in another form, the circuit of all four sides in P. *inches* gives the number of days in a century ($36,524\cdot2$).* This is yet another feature which is either doubted by sceptics or flatly contradicted—for the following reasons.

A careful survey carried out during the winter of 1925-6, by Mr. Cole, B.A., on behalf

* Length of base-side = $365\cdot242$ Pyramid cubits : multiplied by 25 gives $9131\cdot05$ in. Total circuit = $9131\cdot05 \times 4 = 36,524\cdot2$, or number of days in a century.

of the Egyptian Government, when the accumulated sand round the base was cleared, revealing fragments of casing-stones in locations considerably removed from those previously known, enabled the exact size of the base to be determined. This survey also settled the question as to whether the casing stones followed the hollowing-in feature of the core-masonry (referred to above in Chap. II), *as they should according to the theoretical and geometrical reconstruction*, or whether they were set out on a true straight line, corner to corner.

It is now known the Pyramid's base (that is, according to the outline of the casing, of which only fragments now remain) was set out as a true square, which means that the average thickness of the casing at each corner, and up the arris edges, was only half that of the casing up the centre. The result is the actual circuit at the base is 36,238·1 Pyramid inches (or 36,277·8 British inches, the equivalent value of the figures [metres] given in the survey),* instead of the *theoretical* one of 36,524·2 Pyramid inches. This means, of course, that the above astronomical feature is not actually defined in the Pyramid's base *as constructed*, but since the different thicknesses of casing involved thereby

* *Determination of the Exact Size and Orientation of the Great Pyramid of Giza*, J. H. Cole, B.A., F.R.G.S. (*Survey of Egypt*, Paper No. 39, Cairo).

(one at the corners and another at the centre of each face) is not good building practice, it is obvious this was not the original *design*, and that the architect's intention for his ideal structure was that the external casing should follow the same outline as the core-masonry behind it.

This difference between intention and actuality is called by some the "builder's error," though in our opinion it was an intentional error, an explanation, however, critics decline to accept, on the ground of an "error" being inadmissible, petulantly asking, "if an 'intention,' why not an actuality?"

We cannot suggest a better answer to this question than by mentioning an incident that fell to our experience when doing railway work in Canada some thirty years ago.

We had the job of setting out a long stretch—some 20 miles or so—of embankments and cuttings for the contractors to work to, this stretch being dead straight throughout, part of a section of 64 miles without a single curve in it. A previous surveyor had already set out the centre line, and the right-of-way clearing made.

We had not proceeded very far, however, before we discovered that the supposed straight was, in fact, an immense curve, which gradually lost itself in the bush on one side, an error arising because the previous surveyor had been using a theodolite not in

perfect adjustment, and did not take steps to cancel out the small error in it, as he might have done, when producing his centre line from one "station" to the next. The result was the whole straight had to be re-surveyed before the earthworks could be set out. This instance shows how, with the best will in the world, intention and performance are not always the same, even in an exact science like engineering and surveying, and using an instrument of precision, such as a modern theodolite.

While this was a case of quite unintentional error, due to an undetected error in an instrument, the so-called "builder's error" in the Great Pyramid, however, was not of this category, though we have mentioned the above instance to show that it quite well *might* have been due to similar causes. Sceptics may thus take their choice.

Apart, however, from the question as to whether this so-called "error" was intended or not, it seems not at all unlikely that it may have arisen from the fact that the faces of the casing stones were finished off to a uniform surface *in situ*, the entire surface of each face being thus made perfectly flat, without any "hollowing-in" feature up the centre as the inner core reveals. This would bring the casing at the corners thinner than at the centre, whereas had the casing-stones been first fashioned uniform throughout for their

respective courses *before* being put into position, according to the *design* for those courses, the hollowing-in of the core would have been repeated in the casing.

That this was the method of finishing off the casing-stones of pyramids is clearly indicated in the Third Pyramid of Gizeh, in which a large number in the lower courses are still in place, showing some finished off to a smooth surface alongside others, with their undressed surfaces, roughly shaped to the angle of slope, projecting beyond them. (This is very well shown in Plate LV of Mr. Edgar's *Great Pyramid Passages*, Vol. I.)

Just, however, as the connection between the architect's system of metrology (which was kept secret, and not divulged to the races amongst whom the colonists of the Adamic civilization settled) and the secondary system used by the workmen is—as explained above—indicated in the Pyramid, so is the enigma revealed by this supposed “builder's error” (actually so small in proportion to the size of the structure as to be only capable of detection by measuring instruments of precision—a matter of 36 in. in a total length of over 750 ft.), explained in the structure itself.

Now a feature peculiar to the Great Pyramid is that the central vertical north to south plane of the Pyramid's passage system is set—or displaced—286·1 Pyramid inches *east* of the central north to south plane passing through

the apex of the Pyramid. For this reason it is called the Pyramid's "Displacement Factor," and denotes a *negative* value, since the passage axis being east of the structural axis, it is on the left when advancing along the passages.

From the figures given by the Egyptian Government Survey, as quoted above, we find that the actual base circuit at pavement level is the theoretically true (hollowed-in) circuit of 36,524.2 Pyramid inches *minus* 286.1 Pyramid inches. This gives a circuit of 36,238.1 Pyramid inches, or 36,277.8 British inches. This means that the Pyramid cannot be—and was not intended to be—properly interpreted unless a certain factor, *indicated in the structure itself*, is first taken into account, its factor of "Relativity," this factor being introduced in order to prevent the significance of the structure being discovered before the proper era had arrived. And it is only in very recent times that the theory of "Relativity" has been enunciated. Hence this key could not have been appreciated before the present century had set in.

What, then, this "Displacement Factor" means in the science incorporated in the Great Pyramid is, to quote Mr. Davidson's words, that it is "*the mathematical constant of the law of Relativity*. All the astronomical values indicated by the Pyramid's dimensions are determinate values that are simple functions of the year, the Earth's Polar Diameter, and

the mean Sun Distance. All variations in astronomical time rates and angular and linear distances, and their respective rates of change, are expressed in terms of the single mathematical constant defined by the Pyramid's 'Displacement Factor.'"

In other words, the facts of modern astronomical science could not be demonstrated in the Great Pyramid's system of representation apart from the operation of its factor of Relativity. Its use, therefore, in the manner indicated (and elsewhere) proves that the so-called "builder's error" in the Pyramid's square base was intentional, and is not, consequently, an error at all, strictly speaking.

ADDENDUM TO CHAPTER V.

LOST FACULTIES OF THE ADAMIC CIVILIZATION: A TWENTIETH CENTURY COUNTERPART.

Since writing the foregoing chapter and the conclusions set out therein respecting the civilization responsible for the Great Pyramid, and the high attainments it possessed, including faculties since lost to the human race, we came across a very remarkable account of a community living on the slopes of Mount Shasta (14,370 ft.), in Northern California, reprinted by Mr. Lewis Spence, in his *Problem of Lemuria*, from an article in the *Los Angeles Times Sunday Magazine* of May 22, 1932. The circumstances therein described—and the account has every appearance of being genuine and is not fictional, though it might well be so considered, were it not, as the adage reminds us, that truth is often stranger than fiction—are so extraordinary, even amazing, as Mr. Spence himself describes them, that we think they should be given additional publicity on the chance that these pages may be read by someone conversant with the locality who will thus be able to corroborate them. Further, they have a distinct bearing upon the conclusions we have set out in the preceding

pages, in that they afford some evidence, under analogous conditions, to the fact that the white race had, at some period of its existence, powers now lost to it.

The account is written by a Mr. Edward Lanser, and refers to a strange community, supposed to number up to 1,000 people, living in strict seclusion on the slopes of Mount Shasta, and said locally to be of Lemurian origin, the survivors of that continent of which the numerous scattered islands of the Pacific are the remains, which—like its sister-continent Atlantis—disappeared ages ago beneath the ocean.

Mr. Lanser's interest in the subject was first drawn by observing, in the early morning, while passing the foot of Mount Shasta in the train, the whole southern side of the mountain ablaze with a strange light of extraordinary brilliance, resembling the glow of Roman candles. His first conjecture was a forest fire, but the absence of smoke discounted that supposition.

Later, Mr. Lanser determined to investigate the origin of this extraordinary light and trace it to its source, if possible. Preliminary inquiries revealed the fact that (to quote his words) "explorers, officials and ranchers in the country surrounding Mount Shasta spoke freely of the Lemurian community, and all attested to the weird rituals performed on the mountain-side at sunset, midnight, and sun-

rise [such as Mr. Lanser had himself witnessed previously from the train].

"Also, they freely ridiculed my avowed trek into the sacred precincts, assuring me that an entrance was as difficult and forbidden as an entrance into Tibet."

The account then goes on to relate that though the existence of this community has been known to Northern Californians for over fifty years, only four or five explorers have penetrated its invisible protective boundary, but no one has ever succeeded in entering the village itself, or, if they have, no one has ever returned to tell the tale.

Professor Larkin, for many years director of the Mount Lowe Observatory in Southern California, penetrated the wilderness round Mount Shasta as far as he could—or dared—and then, cleverly, continued his investigations from a point of vantage with a powerful long-distance telescope. This revealed to him a great temple in the centre of the village—"a marvellous work of carved marble and onyx, rivalling in architectural splendour the magnificence of the temples of the Yucatan." It also showed him the people farming on the slopes and glens surrounding the village—"with miraculous results, judging from the astounding vegetation revealed to his spy-glass."

Professor Larkin came to the conclusion that "in this village, in a secluded glen on

the slopes of Mount Shasta's partially extinct volcano, far from the beaten paths that lead to our civilization, there live the last descendants of the first [white] inhabitants of this earth, the Lemurians," or better, the Adamics.

"From a practical point of view alone," remarks the writer of the article, "this mysterious village, and its equally mysterious dwellers, is of vital interest, for their display of light (in their rituals at sunset, midnight, and sunrise) far excels our modern electrical achievements [as in modern flood-lighting mere candle-illumination by comparison], and I am, for one, consumed with curiosity to know how these people can produce such amazing light effects." (Refer in this connection our query at p. 99, respecting the possible knowledge of electricity and its harnessing in ancient times.)

The account goes on to state that these Lemurians have been seen in the forest round their village, but only for a brief glimpse, for they possess the uncanny power of blending themselves into their surroundings and vanishing from sight. (Compare Luke iv. 29-30; John viii. 59.)

Occasionally, too, they visit neighbouring towns, to make purchases, but these are practically confined to sulphur, salt, and lard, all of which commodities they buy in bulk. Not unlikely the sulphur is required for their extraordinary lighting effects at their daily rituals.

These purchases are always paid for with gold nuggets, far exceeding in value the cost of the articles purchased, as, of course, they do not use American (or indeed any) money. This indicates the possession of a rich gold mine on Mount Shasta, and during the Great War they made generous gifts to the American Red Cross.

The men are described as tall and noble-looking, with close-cropped hair, dressed in spotless white robes similar to the enveloping garment worn by high-caste East Indian women to-day. That they have a real existence, and are not legendary, is proved by the fact that the civic records of San Francisco reveal that a deputation from the village, headed by a white-robed patriarch, with an escort of younger men, made an official visit to that city to bring greetings and an assurance of goodwill upon the anniversary of the founding of their retreat on Mount Shasta.

The article concludes :—" As an illustration of the true scientific knowledge possessed by these Lemurians, we can take the forest fires that raged in many parts of Northern California last year [1931]. When a formidable fire crept up Mount Shasta, threatening the mystic village, they caused a wall of invisible protection to rise between the village and the forest fires. As the flames reached that point, they were mysteriously arrested—

snuffed out.* One can see the very definite line where the fire ceased to this day." [Query—Was this the "invisible ray" scientists are experimenting with to-day, but far more potent?]

"It is not incredible that the last sons of lost Lemuria are nestled at the foot of Mount Shasta's volcano. The really incredible thing is that these staunch descendants of that vanished race have succeeded in secluding themselves in the midst of our teeming State, and that they have managed through some marvellous sorcery to keep highways, filling stations, and other ugly counterparts of our tourist system out of their sacred precincts."

Here appears to be well-authenticated proof that there exists on this globe to-day human beings with powers of control over fire, and perhaps over other forces of nature as well, a

* What this means will be realized by anyone who, like the writer in British Columbia, has witnessed a real forest or prairie fire. Man is helpless before such a conflagration, which is only stopped either by a heavy and continuous downpour of rain, or by the fire burning itself out. The most destructive forest fire in the continent of North America on record is one which occurred in the summer of 1868, as the result of a great drought which lasted from April till November. The fire started during the summer in the State of Oregon and spread through the State of Washington, and through British Columbia as far north as Alaska. The smoke from such a vast conflagration was so dense that the sun was never seen for two months, while all shipping along the coast was brought to a standstill.

knowledge of self-protection lost to other humans, and the ability to vanish at sight, or at least of appearing to do so. They also must possess a vitality and power of reproduction much beyond modern man, for a community, shut off as this must have been for countless generations from others of their kith and kin, would inevitably have died out and become extinct, such as has been the fate of many native races, and is bringing towards extinction the Indian of America, North and South, and the aborigine of Australia.

This extinction of the American Indians and Australian native races has undoubtedly been hastened by the advent of the white man into their territories; this may account for this remnant of the Lemurians so jealously protecting themselves from the approach of outsiders and so enabling them to survive.

The extraordinary super-human powers (i.e. by modern standards) which these survivors display were, with others, clearly bestowed on the Adamic race as originally created, an inference plainly drawn from Genesis iii. 22. By sin, the original parent race lost these supernatural powers, though they were probably maintained in greater or less degree by the groups of colonizers who spread over the world and escaped the destruction which fell on the parent race in its habitat in Central Asia. Such groups carried the Adamic civilization and its scientific knowledge to Lemuria

and Atlantis, taking in Central and South America on the way.

"Some scientists have long ago declared," states Mr. Lanser in the above article, "that certain of these early people migrated to other parts of the earth before the continents of Atlantis and Lemuria are supposed to have disappeared beneath the waters of the ocean, and the Lemurians on Shasta are doubtless the descendants of those early survivors who trekked to the American continent, possibly South America, the succeeding generations finally moving north to California."

Scripture clearly indicates that these lost powers will be regained to the human race during that era of restoration and restitution (Acts iii. 21) preceding the Millennium, the opening stages of which are close upon us. The rapid and phenomenal development of modern science is clearly a preparation for such restoration, which, however, will be carried out under Divine direction in order to prevent their mis-use. For it is precisely the *mis-use* of those powers as man now possesses that has led the world to its present chaotic state, and which, if allowed to develop uncontrolled, would lead to the extinction of our boasted civilization.

"The achievements of science," said Mr. H. B. Lees-Smith, then President of the Board of Education, in the course of his inaugural address before the International Congress of

the History of Science and Technology, held in London during the summer of 1933, "are now so rapid in their accumulative effect, that one's mind has become dazed and we almost lose the capacity for surprise. . . . Science is immeasurably beneficent. It is, at the same time, completely merciless.

"Science and technology are from day to day providing mankind with the most fearful instruments. The supreme question which now rests between nation and nation is whether these great conquests of Nature are to be used for the enlargement and beautification of life or for the destruction of our fellow-men. If ever again these powers are used for destruction, this great Western civilization of ours will rightly disappear."

The state of the world to-day, in fact, has been well summed up by Professor Gilbert Murray, in an address before the Historical Association given in London early last year:—

"A civilization in which, amid many revolutions and varieties of social structure, the nobler elements seem to be at the mercy of the lower, and *Homo Sapiens* cannot control his fate."

"Seek ye *first* the Kingdom of God and His righteousness and all these things shall be added unto you" (Matt. vi. 33).

In these words did our Lord promise that, if mankind would place *spiritual* interests *first* in its estimation, then not only would such,

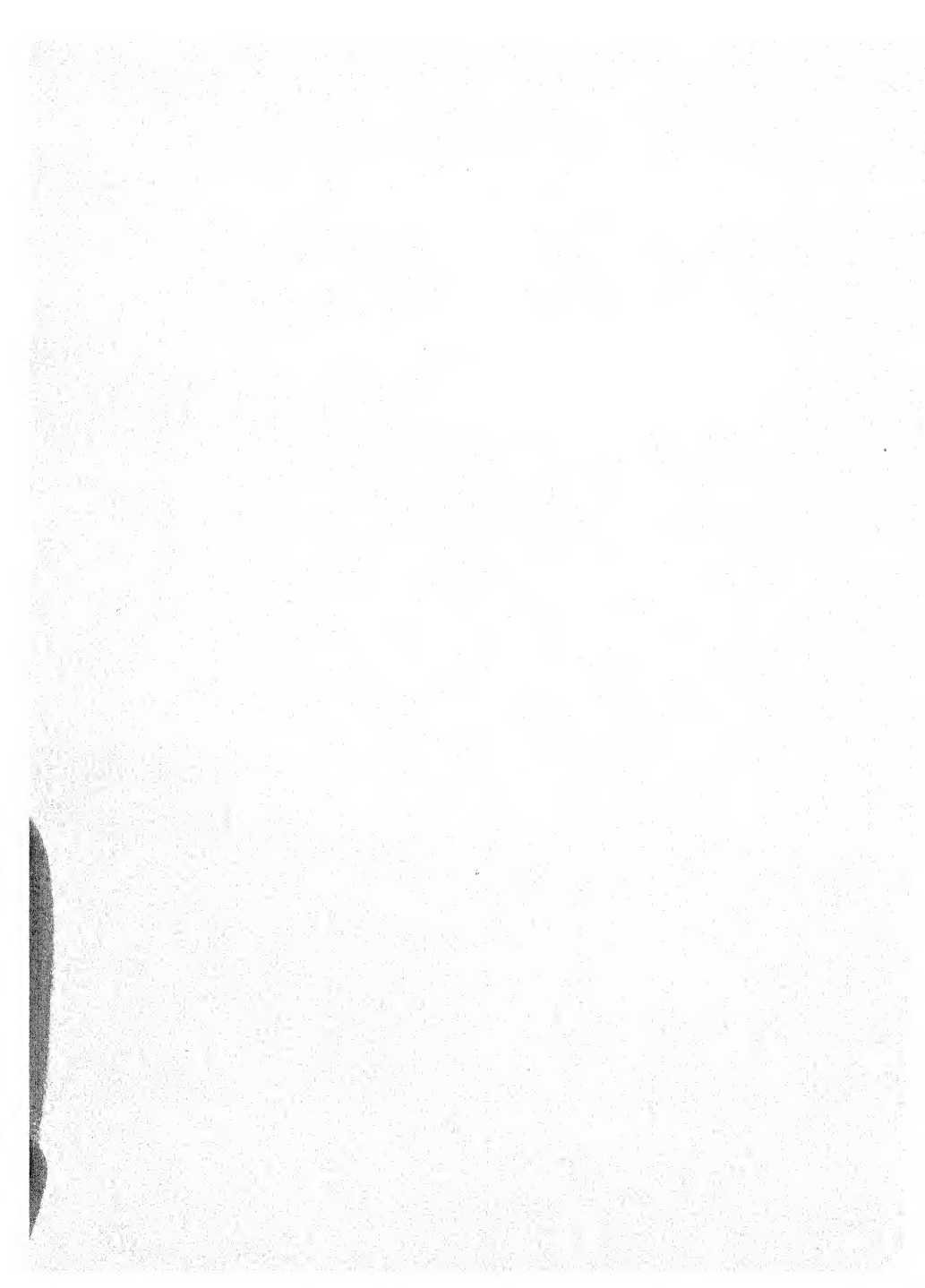
and the benefits ensuing therefrom, be granted, but there would *also* be included therewith all those *material* interests necessary to its daily needs as the reward.

This injunction, alas ! civilization has only too plainly ignored and is consequently being deprived of " these things " until, as it totters to its fall—and the condition of Europe to-day with the war clouds banking up heavily on the horizon* clearly warn us we are on the threshold of the final drama—it is eventually *compelled* to seek " the Kingdom of God and His Righteousness." Such is the crisis that will witness our Lord's return.

Such, too, is the lesson conveyed in the symbolism of the Great Pyramid, whose predictive chart of world history, covering an era of six millenniums, forms a scientific record of the course and development of the spiritual and moral disease from which the human race has suffered in the past, is suffering to-day, and from which it will only be delivered by the coming of the Great Physician. Then shall be inaugurated that era of the " restitution of all things " and the " times of refreshing from the presence of the Lord " foretold by St. Peter (Acts iii. 19-21), and the conditions bestowed in the first instance on the Adamic race will be gradually restored.

* These words are being penned on August 19, 1935, when comes the news of the breakdown of the Paris Conference on the Italo-Ethiopian dispute.

Has this strange community of (so-called) Lemurians, undoubtedly retaining some of the higher endowments and faculties originally inherent in the Adamic race, been preserved—one might truly say miraculously—as a link, so to speak, between the original parent race and its restoration at the close of the six thousand years of the Adamic epoch?



CHAPTER VI

ASTRONOMICAL OBSERVATORY THEORY

Arab Traditions of the Theory. Sabaism.
The Tower of Babel.
Accurate Orientation of the Great Pyramid.
Its purpose as a "Sun-dial."
Proctor's Theory of the Great Pyramid : an Astrological
Edifice.
Structural objections to the Theory.
Recent Revival of the Theory.
Macnaughton's *Scheme of Egyptian Chronology*.
"Long" and "Short" systems of Chronology.
Khufu and "Khnum Khuf."

"The fair question is, does the newly-proposed view remove more difficulties, require fewer assumptions, and present more consistency with observed facts, than that which it seeks to supersede? If so, the philosopher will adopt it, and the world will follow the philosopher."—*Extract from an Address given before the British Association* (quoted by Seiss).

CHAPTER VI

ASTRONOMICAL OBSERVATORY THEORY

ONE theory, which has shared with the tombic theory almost equal honours, is the astronomical observatory idea of the Great Pyramid, a theory much held from early times and revived towards the end of last century in a modern form by an astronomer, Richard A. Proctor, in his book, *The Great Pyramid, Observatory, Tomb and Temple* (Longmans, new edition, 1893), written to demolish the thesis of Piazzzi Smyth referred to in our previous chapter.

This theory appears in one form or another in various Arab traditions. Thus Masoudi says: "In the Eastern (or Great) Pyramid were inscribed the heavenly spheres and figures representing the stars and planets in the forms in which they were worshipped . . . likewise the position of the stars and their circles (cycles)." Abd-al-Hokim gives a variant of this as follows: "In the East Pyramid (were) divers celestial spheres and stars and what they severally operate in their aspects . . . and the books that treat of these matters."

Owing to this association of the Great Pyramid with the stars and planets, it has been regarded as a monument to Sabaism, or worship of the stars, which, originating with the Babylonians, had a wide vogue in the ancient world, and with which "serpent-worship" was intimately connected. This theory of the Great Pyramid was set forth by Mr. C. Staniland Wake in a small 8vo volume entitled, *The Origin and Significance of the Great Pyramid*, published in 1882. For this reason he depicted on the cover of his book a design taken from an ancient engraved gem, showing a serpent enclosed in a pyramid, and surrounded by five stars.

A recent author, Duncan Macnaughton, in his *Scheme of Egyptian Chronology* (Luzac, 1932), noting our reference to this in our *Mystery of the Great Pyramid*, remarks that this is possibly a reference to *Canis Major*, of which Sirius, the pre-eminent star of Egypt, is the chief star, Sirius being symbolized by the Serpent, the five other stars in the constellation being represented by the five stars in the design of the gem. Mr. Macnaughton's reference to this representation of a pyramid enclosing a symbol of the constellation containing Sirius is in connection with his supposed use of the Great Pyramid as an observatory of that star, thus following Proctor's astronomical observatory idea.

The tradition, also, mentioned by Josephus

(and quoted above) attributing the Pyramid to Sethites as a memorial to their astronomical knowledge (compare the similar ascription to Enoch), is clearly due to the idea of it being an astronomical structure in one form or another.

This idea of the Great Pyramid as an astronomical structure undoubtedly had its origin with the ancients in the Tower of Babel (built *after* the Deluge, however, and therefore an imitation of the Pyramid, its form being reproduced in the Mexican pyramids, surmounted by a temple—see plate at p. 220 in Spence's *History of Atlantis*), a structure that appears to have struck the imagination of the ancient world by its great size as much as the Great Pyramid has done since.

As, therefore, the Tower of Babel was believed to have been erected for the purpose of observing the heavens, so were pyramids—and more particularly the Great Pyramid, because of its flat summit—thought to have been raised with a similar intention, their long sloping passages, pointing, as they all did, towards the North Pole, appearing to serve admirably as telescopes.

Two fatal objections to this idea, however, were noticed by observers long ago—that, when their casing-stones were intact, no one could possibly have ascended to their summits by their smooth surface; and, secondly, that it would hardly have been necessary to erect

nine observatories so near each other as the nine pyramids of different sizes standing on the plateau of Gizeh. And regarding the telescope idea of the passages, not only were they blocked up, but the entrance was so well concealed that, after a time, even tradition failed to locate its position.

The fact that the Great Pyramid has been set out with extraordinary astronomical precision * clearly indicates it had some purpose to fulfil of an analogous nature, and was, no doubt, a deciding factor in giving rise to the astronomical observatory idea. Its primary purpose, in fact, was that of a huge sundial of the seasons, recording time like the gnomon of a sundial, and Pliny, it is interesting to note, refers to it in this capacity as the *dial*. It was therefore erected on a particular site, with its slopes at a particular angle, in order to indicate, by the length and direction of the shadows at noon, the annual occurrence of the

* In this respect it still is, even after 4,000 years of earth "crust-creep" and other disturbing factors, the most accurately oriented edifice standing, being but three minutes and six seconds of angular measure off true astronomical north as ascertained by the most recent surveys. When erected, therefore, the Great Pyramid was perfectly oriented, an achievement not obtained even yet in the most modern observatory. And to compare it with other astronomical buildings, the Planet Temple at Borsippa was in error by six *degrees* (compared to the 3 mins. 6 secs. of the Pyramid to-day), and the celebrated Uranibourg observatory, oriented by the most famous astronomer of that day, Tycho Brahe, is incorrect by six minutes.

astronomical and agricultural seasons. Such also was the object of structures like the circles of Stonehenge, Avebury and elsewhere: what these did in a rough and ready fashion the Great Pyramid did accurately and scientifically for its particular location.

Mr. Cotsworth, in his *Rational Almanac* (1902), has gone into this aspect of the Great Pyramid very fully, and carried out sun-shadow experiments to test his conclusions (some of which, however, are based on erroneous assumptions, as, for example, that the Great Pyramid was built *last* of any pyramids), showing that this form of structure was the best for such a purpose, ordinary stakes or poles being far too short to attain practical results.

"Cumulated evidence," he writes, "based upon these shadow experiments, so strongly emphasized this as the object for which the pyramids were built that I became convinced that such was the original purpose of the Pyramid builders."*

* Unfortunately, Mr. Cotsworth saddled his investigations with assumptions, which detract from the value of his researches. One such assumption is that the Great Pyramid was built last of any, and that the other pyramids represented evolutionary types leading up to it—the most perfect type of all. "*The greatest difficulty*," he writes (p. 23), "*was to find the true slope . . . the Second Pyramid has an angle greater than the adjoining Great Pyramid π angle, whilst the Third Pyramid's angle is less.* From these, I argue that their designers' prior efforts having demonstrated by shadows that the

This purpose, however, only applies to the first three pyramids on the Gizeh Plateau—the Great, Second and Menkaura's—later ones being too small and not sufficiently accurately oriented. It was this particular function of the exterior of the Great Pyramid as a huge sundial of the seasons, with its dazzling white limestone surfaces, that caused it to be named *Khut*, or “Light,” by the ancient Egyptians.

Even those who regard the Great Pyramid as purely a symbolic structure can see in its ancient name of “Light” a significance. Thus Mr. Chapman, under the heading “The Pyramid Symbolical” (Chap. III in *The Great Pyramid from the Aspect of Symbolism and Religion*), writes :—

“From long distances, on almost every hand, man had only to gain a trifling eminence and he saw in the sunshine . . . the pyramid, in and out and throughout the emblem of Deity, the acme of achievement, of light, heavenly and human, spreading its message of aspiration, and visibly reflecting

angle of the Second was *too large*, and that of the Third *too small*, by continuous experiments they would be enabled to determine that mean between these two which gave the true slope requisite to perfect their final effort when building the Great Pyramid, which instead of being the *first* was really the *last* built.”

The facts, however, as now generally recognized, are just the reverse. The Second and Third Pyramids are imitations—externally—of the First, while the close similarity in their face angles is probably accounted for by the considerations noted above (p. 42) in connection with the Rhind Mathematical Papyrus.

the centre and source of life. Contrasting man's social surroundings with its magnificence, I think we may conclude that the pyramid was calculated to serve as an age-long 'World-Light.'"

This sundial function of the three largest Gizeh pyramids is clearly indicated in the remarkable air-photograph by General Groves referred to above (Chap. II), and reproduced by Mr. Davidson in the *Structural Engineer* for March, 1930, with their clearly defined, west to east, shadows falling across the plateau, the extremity of that cast by the Great Pyramid being broken by its extending beyond the edge, which originally was further from the Pyramid than it is to-day, thus giving the necessary length of flat shadow-surface. It will be noticed also that these three pyramids are set out with their bases on a direct N.-E. to S.-W. diagonal, so that their noon shadows do not interfere the one with the other.

The Second Pyramid compares very well with the Great Pyramid in accuracy of orientation, probably due to the fact that it was commenced while the latter was still under construction and the technical skill of the foreign supervisors was still available; that of the Third Pyramid, however, is much inferior, an inferiority which becomes more pronounced as we recede from the era of the Great Pyramid.

The astronomical observatory theory of Proctor, however, was a totally different conception of the Great Pyramid. Noting some of the various objections to the exclusive Tombic Theory of the Pyramid, such as the changes in size and direction of its internal passages and chambers, and its other peculiarities compared to similar structures, he advanced the thesis that "while certainly meant to be a tomb, it was obviously intended to serve as an observatory, though during the life time only of its builder" (Preface).

According to this theory, the Great Pyramid was a gigantic astrological edifice or horoscope for Khufu, and for him only, which, after his death, was closed in and completed as a pyramid when his mummy had been deposited in the King's Chamber, thus getting over the difficulty, or rather impossibility, of placing a body therein once the chamber had been roofed over, since access to it by the ascending passage and Grand Gallery was impossible by reason of the granite plug at the foot of the former, since it was built into position during construction, that is, when the Pyramid had risen but twenty feet or so above its base. The emptiness of the (supposed) sarcophagus in the King's Chamber is explained by rifling of the chamber by robbers, though how or when entry was gained to effect this is not suggested, since no signs of a forced entry are known before that of Al Mamoun, early in the ninth century A.D., who found it empty.

Proctor explains the Great Pyramid as having been built up only to the level of the King's Chamber floor, either before or during the early reign of Khufu, thus giving it the appearance of a huge frustum, as illustrated in the frontispiece to his volume. The upper end of the Grand Gallery was thus open to the southern sky, and rose up above the level of the pavement, which was marked out just as modern astrologers map out a horoscope. It thus commanded a long but relatively narrow vertical space of the heavens and could thereby be used as an astronomical observatory, but only in a restricted manner, though sufficient for astrological purposes.

"When we remember," he writes (p. 162), "that the astronomy of the time of Cheops was essentially astrology, and astrology a most important part of religion, we begin to see how the erection of the mighty mass of masonry for astronomical purposes may be explained—or, rather, we see how, being certainly astronomical, it *must* be explained. Inasmuch as it is an astronomical building, erected at a time when astronomy was astrology, it was erected for astrological purposes. It was in this sense a sort of temple, erected, indeed, for the peculiar benefit of one man or of a single dynasty; but . . . what benefited him he doubtless regarded as a benefit also to his people. In whatever sense the Great Pyramid had a religious significance with regard to him, it had also a national religious significance."

Being thus erected purely as a horoscope of Khufu, it was no longer required after his death. The building was consequently completed by construction of the Ante-chamber and King's Chamber and the short passages connecting them, and the masonry carried up to the summit.

"If it is certain," continues Proctor, "on the one hand, that the building was built astronomically, and was meant for astronomical observation, it is equally certain that it was meant for a tomb, that it was closed in very soon after the King had died for whom it was built, that, in fine, its astronomical value related to himself alone."

Proctor's thesis, discounted as it is by all the evidence, structural and Egyptological, is, unfortunately, an instance of that type of presentation—referred to in our Preface—which does the subject and its author more harm than good by the dogmatism with which it is advanced, and by the intolerance for the views of others which it displays. It is frequently impressed upon the reader that Proctor's astrological-tomb theory is the only one that "even comes near to giving a commonsense interpretation of the combined astronomical and sepulchral character of this wonderful structure."

Again, on another page we read: "While there is no other theory of the pyramids generally, and of the Great Pyramid in parti-

cular, which has either positive or negative evidence in its form, the astrological theory is supported by all the known positive evidence [as a matter of fact, the exact opposite is the case] ; and strong though such support is, it derives yet greater strength *from the utter failure of all other admissible theories to sustain the weight against them* " [our italics].

The flippancy with which Proctor treated the views of others, dismissing Smyth's thesis as imaginary, and the scientific values monumentalized in the Great Pyramid as pure coincidences—ignoring the fact that these are far too numerous *and exact* to be possibly due to such fortuitous circumstances—shows that (astronomer as he was) he had given the subject only very superficial study, while in dealing with simple statements of fact he goes much astray as the following statement shows:—

"It is clear enough that, whatever purpose Cheops had in building the first pyramid, Chephren must have had a similar purpose in building the second ; and we require a theory which shall at least explain why the first pyramid did not subserve for Chephren the purpose which it subserved or was meant to subserve for Cheops. The same reasoning may be extended to the third pyramid, to the fourth, and, in fine, *to all the pyramids, forty or so in number*, included under the general designation of the Pyramids of Ghizeh, or Jeezeh " [our italics].

For anyone writing on any matter coming under the head of Egyptology to place *all* the pyramids scattered throughout Egypt, north to south, on to the plateau of Gizeh, can only be regarded as carelessness verging on ignorance*—a carelessness that reference to any book on the subject would have avoided.

Not only did Proctor regard the observatory theory of the Pyramid as the one solution of its problem, but considered it as the structure *par excellence* for such a purpose, an idea also taken up by V. E. Johnson in his *Egyptian Science*:—

“The incalculable aid to the progress of astronomy which might have been effected by means of the Great Pyramid, left in that unfinished state mentioned by Proclus when he says that it terminated in a platform† . . . was not known to the ancients. . . . Had the Pyramid been left in that incomplete but, astronomically, most perfect form, the edifice might have remained for thousands of years the most important

* There are about thirty-eight pyramids, or remains of pyramids, existing in Egypt to-day, some mere shapeless mounds hardly recognizable as such. Out of this total *nine* are situated at Gizeh.

† Thus confirming the statement of Diodorus quoted above in Chap. II regarding the Pyramid's missing apex-stone, so that it terminated in a flat summit. Here, however, the writer quoted applies Proclus's statement as confirmation of Proctor's theory that it was not originally built higher than the 50th masonry course—a totally incorrect application.

astronomical structure in the world. Nay, to this very day it would have retained its pre-eminence, provided, of course, that its advantages over other buildings had been duly supplemented by modern instrumental and optical improvements.

"This huge edifice was, however, unfortunately erected for an entirely selfish purpose—the self-glorification of Cheops—both as regards a tomb and an astrological observatory, and the immortal service which this edifice might have rendered to the progress of science and truth was overlooked by them, and the growth of astronomy thereby incalculably retarded."

The mental attitude revealed by the foregoing conception of the Great Pyramid has been well summed up by the late Marsham Adams who, after pointing out the pronounced tendency of modern scientists to belittle—as Proctor did—the scientific achievements of the builders of that structure, makes the following comment in the Preface to his *Book of the Master* :—

"It is not a little difficult to understand the position of those who, while recognizing with Professor Proctor that the temples of that country [Egypt] were erected by astronomers for astronomers, can nevertheless regard those stupendous structures, the pyramids, as the mere monuments of a folly even more stupendous than themselves. It is amazing to think that, while modern

investigation only brings out more clearly the profound skill and forethought lavished upon their construction, yet even scholars should be content to regard the whole line of Pharaohs as animated by no other spirit than that of Charles Dickens's happy-go-lucky creation, Mr. Wemmick, in *Great Expectations*. 'Hallo!' said that casually-minded individual, 'here's a church, let's have a wedding.' 'Hallo!' according to these writers, cries an Egyptian monarch, 'here's a pole-star, let's put up a pyramid!'"

When we come to examine Proctor's theory practically, and in the light of what is definitely established regarding the Great Pyramid, we find various objections to it, which that investigator—and those accepting his view—have either overlooked or ignored.

To begin with, his contention that it had originally been built no higher than the level of the 50th course of masonry (the level of the floor of the King's Chamber) is a pure assumption, and is discounted by all structural evidence, which proves that the entire bulk of the Pyramid was erected in one continuous series of operations without any appreciable break between them. In addition, the evidence of the masons' inscriptions over the King's Chamber proves that that chamber was completed and roofed in (thereby preventing any future access to it) *within* the reign of Khufu.

Proctor attempted to support his theory by

quoting Sir Flinders Petrie's statement that the masonry above the 50th course is not so good as that below it, but these supposed defects are actually due to the effects of subsidence, while against this is to be put the fact that Petrie noted the workmanship in the King's Chamber to be better than that in the Grand Gallery.

The fact also that the Grand Gallery is constructed on the principle of the arch, its walls rising in a series of overlaps so that they come sufficiently close together at the top to allow of the gallery being roofed in with a single row of stones, like the key-stone of an arch (Proctor, however, illustrates its construction to suit his theory—see his Fig. 10), means that that portion rising precariously above the 50th masonry course would collapse, since the Gallery walls depend for support upon the core masonry behind them, as an arch relies on its abutments.

Another point overlooked is the position of the Granite Plug (entirely omitted in Proctor's diagrams*) which, being fixed at the foot of the Ascending Passage immediately *above* its junction with the Descending Passage, would

* He refers to it, however, in his text, as situated at the point where the two passages meet (but omits to say whether above or below their junction, or in which of them), "for the purpose of retaining there a reflective surface of water." Its actual position, however, makes this impossible in either direction.

very effectively prevent the observation (which his theory requires) from the Grand Gallery of a north star shining down the Descending Passage, and being reflected up the Ascending Passage from a trough of water at the junction of the two passages, to effect which, however, the Descending Passage would require to be plugged *below* that point.

Yet another fact that militates against the astronomical observatory theory is that the entrance to the Descending Passage in the North face of the Pyramid was closed by a hinged stone, the form of which has been restored by Petrie from details found in the Southern Stone Pyramid of Dahshur, which still retains its casing at this point (refer Fig. 5 in diagram at p. 14 of our *Witness of Great Pyramid*, 2nd edition). These details show that, when open, only half the passage height is available: light from the star would thus be obstructed.

While this theory thus breaks down by virtue of various constructional facts revealed in the Pyramid itself, at the same time it fails to account for other features such as the object of the Horizontal Passage, the Queen's Chamber to which it leads, the Subterranean Pit, and the Ante-chamber; also the air channels to the King's and Queen's Chambers, which obviously would serve no purpose in tombs for the reception of mummies.

We have thus dealt at some length with

this theory because it has been revived very recently by Mr. Duncan Macnaughton, author of *A Scheme of Egyptian Chronology*, published in 1932, to which reference has already been made in another connection. In view of all the evidence—structural and Egyptological—which has been established since Proctor advanced this observatory theory, and particularly so during the last ten or twelve years—it seems strange that any Egyptologist or student of the Great Pyramid should thus attempt to revive it.

Mr. Macnaughton, however, appears to have adopted the theory in order to support his scheme of chronology which revives the old “long” chronological system, placing the commencement of the First Dynasty from 2,000 to 2,800 years back compared to the modern or “short” system—or minimum chronology — represented by Professor Breasted and the Berlin School. This “long” system is one inherited from a past generation of Egyptologists and, according to Breasted, is now-a-days maintained only by a small and constantly diminishing number of modern scholars. This revival of it, therefore, by Mr. Macnaughton, like his revival of Proctor’s theory of the Great Pyramid, appears strange and difficult to account for.

In this connection it is interesting to note that official Egyptology, as represented in the British Museum publications, now

(1933) gives the date of the Fourth Dynasty as *circa* 2800 B.C., compared to 3733 B.C. in its *Guide to the Egyptian Collections* of 1909, thereby reducing the chronology by nearly a thousand years. There is little doubt that, before long, Egyptologists will be obliged to reduce their chronology still further, till it agrees with that revealed in the astronomical chronology of the Great Pyramid for the date of Khufu (refer Chap. III above).

In reviving Proctor's theory, Mr. Macnaughton does so in order to put the time of building the lower portion of the Great Pyramid (*i.e.* up to the 50th masonry course) back to a date "roughly between 5600 to 5100 B.C.," at which epoch Sirius, when southing, would appear in the field of view commanded by the open upper end of the Grand Gallery, the observer being stationed at the higher end of the Descending Passage and sighting the star in the water-reflector below him (refer above, p. 175, as to use of reflector according to Proctor).

"My view is," writes Macnaughton, "that both passages [Descending and Ascending Passages] were for the purpose of observing Sirius. The reflective surface made it unnecessary for the observer to descend to a great depth. All he required to do was to sit inside the entrance in the north-face (and shut the door, thus shutting out the light behind him, if observation were

made in the daytime), when it would be possible to see Sirius when its elevation was about $26^{\circ} 18'$ to $28^{\circ} 18'$ at southing" [angle of passages, $26^{\circ} 18' 10''$].

"The period when Sirius southed at that elevation was roughly between 5600 to 5100 B.C. It is probable that the lower portion of the Pyramid up to and including the Grand Gallery was erected within that period. When erected the astronomical priests probably did not realize that with the passage of time precession would render the passage useless for the observation of Sirius (p. 98).

"Then came Khufu, who conceived the idea of converting the old disused Sirius observatory into a pyramidal tomb for himself, by continuing the slopes up to their present height, building in the King's Chamber in the process. He also made use of the stones quarried by Khnum Khuf, for Khnum Khuf's name appears as well as his own on the stones in the King's Chamber" (p. 103).

Elsewhere, at p. 102, to support the idea that Khufu was only responsible for the upper half of the Great Pyramid, above the 50th course, it is stated: "It is strange that though the stones in the King's Chamber show his name, not a single trace of his name [Khufu's] is found on stones in the lower chambers and passages."

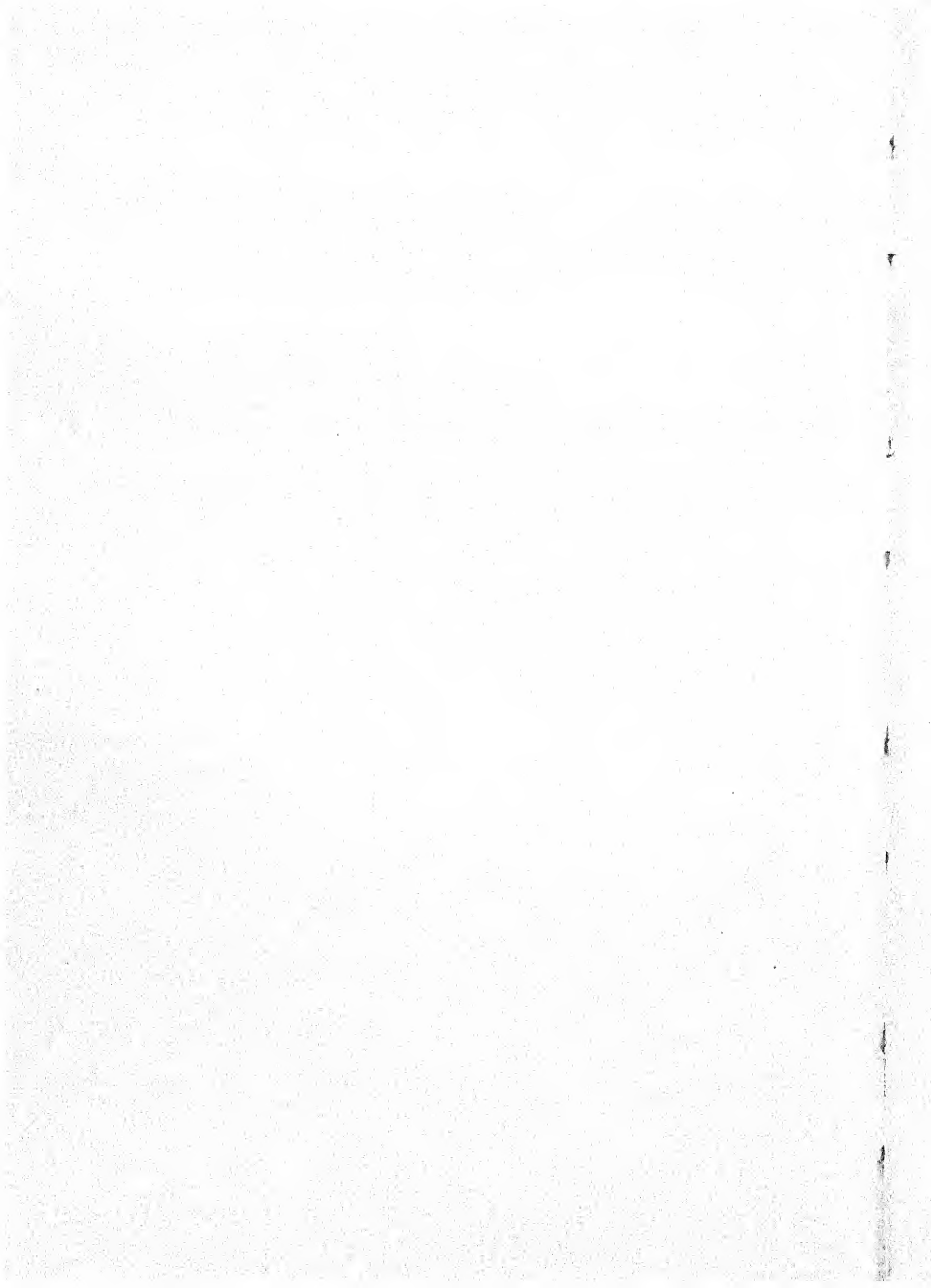
Unfortunately, there are various errors of fact in the foregoing, arising, we can only

suppose, from an incomplete study and appreciation of the subject. In passing, however, we might note that, as in Proctor's case, no account is taken of the Queen's Chamber, which is below the 50 ft. course and therefore should apparently have had something to do with the observatory idea, as it was not a burial chamber, since this function of the structure was a later one on the part of Khufu to utilize an edifice no longer put to its original purpose.

Not only is Mr. Macnaughton in error in putting Khufu *after* Khnum Khuf (thus reversing the proper order of their reigns—"Khnum Khuf" means "he who is united with Khufu" (Petrie), that is, a co-regent who, on Khufu's death, became sole monarch as Khafra)—but he is also incorrect in stating that Khufu's name is found on "stones in the King's Chamber." They are, on the other hand, in the form of rough quarry marks (some of them upside down, proving they were painted on the stone *before* being placed in position) on the ceiling-stones in the *inaccessible* (so-called) construction chambers *above* the King's Chamber proper. Both Khufu's and Khafra's (as "Khnum Khuf") names appear, proving the stones were quarried, built into place, and the *whole* Pyramid sealed up and completed in their lifetime.

We note that Mr. Macnaughton, to counter the objection noted above respecting the pre-

carious condition of the projecting upper end of the Grand Gallery, visualizes additional supporting masonry at the sides, like buttresses; needless to say, like the half-built Pyramid itself, a pure assumption. In fact, like so many other theories advanced for the Great Pyramid, this astronomical observatory idea is founded on assumptions, while *facts* are either disregarded or made to suit the theory.



CHAPTER VII

CONCLUDING OBSERVATIONS

The Thesis of Marsham Adams.

The Great Pyramid and the Egyptian *Book of the Dead*.

The Allegory enshrined in both.

The "Secret House" of the Egyptian Mysteries.

The Pyramid as a Temple of Initiation.

Freemasonry in the Great Pyramid.

Criticism of Marsham Adams refuted.

Common origin of the Pyramid and the *Book of the Dead*.

Both ascribed to Thoth.

The Pyramid's missing Top-Stone: Will it be found?

Supposed undiscovered Passages in the Pyramid.

Restoring the Great Pyramid.

Modern Engineering Feats.

An Appreciation of the Great Pyramid by the late

Rev. J. T. Goodsir, F.R.S.E.

"The day is passing when mere weight of evidence alone, unsupported by considerations which result from inspiration and insight, can be accepted of the world, which, indeed, is weary of the blundering processes of that species of thought which refuses to avail itself of those intuitional gifts without which real knowledge and progress can never be accomplished."—

LEWIS SPENCE in *The Problem of Lemuria*.

CHAPTER VII.

CONCLUDING OBSERVATIONS.

THE Grand Gallery of the Great Pyramid has always been the greatest constructional puzzle of that edifice. It is, in fact, the most arresting structural feature in the whole building. Its sudden lofty spaciousness—about 28 ft. high, or as high as a modern two-storied house, and much more lofty than any of the chambers to which it gives access—after the very cramped passages leading to it, and its being immediately followed by another similarly restricted passage (called the First Low Passage), seems difficult to account for on such utilitarian grounds as that of a mausoleum. At the same time the steepness of its slope precludes its purpose as that of another chamber. It was considerations such as these that led Proctor to adopt the astronomical idea of it described in our previous chapter.

The only satisfactory explanation of the Grand Gallery—and one that has been endorsed by the distinguished Egyptologist, the late Sir Gaston Maspero, Director-General of Antiquities in Egypt—is that first advanced some forty years ago by the late Marsham

Adams, an eminent Oxford scholar, and published in two volumes, *The House of the Hidden Places*, 1895, and *The Book of the Master*, 1898.*

Marshall Adams has shown that the Egyptian "Book of the Dead" refers to an *ideal* structure and to the passages and chambers therein, and that these passages and chambers followed precisely the order and description of those of the Great Pyramid—the *ideal structure of the Book* monumentalized in stone, precisely as it monumentalizes the *ideal geometrical structure*.†

"The intimate connection," writes Adams, "between the secret doctrine of Egypt's most venerated books, and the secret significance of her most venerable monument, seems impossible to dis sever, and each form illustrates and interpenetrates the other. As we peruse the dark utterances and recognize the mystic allusions of the Book, we seem to stand amid the profound darkness enwrapping the whole interior of the building. . . . Dimly before our eyes, age after age, the sacred procession of the

* Recently republished in one volume under the title—*The Book of the Master of the Hidden Places*, edited by E. J. Langford Garstin, with Notes and an Appendix, 1933.

† The thesis of Marshall Adams, with additional confirmations from recent research, is dealt with in the author's *Mystery of the Great Pyramid* (Routledge), 1929.

Egyptian dead moves silently along as they pass to the tribunal of Osiris. In vain do we attempt to trace their footsteps till we enter with them into the Hidden Places and penetrate the secret of the House of Light [compare the ancient Egyptian name for the Great Pyramid—"Khut," or "Light"]. But no sooner do we tread the chambers of the mysterious Pyramid than the teaching of the Sacred Books seems lit up as with a tongue of flame"—*House of the Hidden Places* (p. 246).

Marsham Adams thus shows that the unique system of passages and chambers—and particularly the Grand Gallery, obviously unnecessary in a tomb—has an allegorical significance only explained by reference to the Egyptian "Book of the Dead." In other words, were Egyptologists able to understand properly their own "Book of the Dead," which they have deciphered for us, they would have discovered that herein was revealed, in the form of an allegory, the key to the Great Pyramid and its significance, and would not have run away with the idea that it was merely a tomb.

The culminating theme of this allegory is found in the "*open* tomb," symbolized by the lidless coffer in the King's Chamber, which probably explains the basis of the tradition told by the priests to Herodotus that Khufu was never buried in the Great

Pyramid, though Herodotus himself may have thought it was intended as his tomb.

"In truth," writes Marsham Adams, "the Great Pyramid is the House of a Tomb; but it is not a closed but an open tomb. It is the tomb, not of a man but of a god; not of the dead, but of the risen. It is the tomb of the divine Osiris . . . in unison with whom the holy departed achieved the path of illumination, and passed in safety the divine tribunal."—*Book of the Master* (p. 127).

Everything, in fact, about this vast, Divinely inspired monument indicates it was erected, *not* as a tomb, but to reveal what lies *beyond the tomb*. The King's Chamber is consequently a chamber of the *living*, and is described in the ancient Egyptian texts as the "Chamber of the Grand Orient," wherein the divine Osiris is wakened from his slumbers.

The allegory of the Great Pyramid, in fact, expresses precisely the same concept as St. Paul so sublimely sets forth in 1 Cor. xv. 51-54: "Behold, I show you a mystery; we shall not all sleep, but we shall all be changed. In a moment, in the twinkling of an eye, at the last trump. . . . For this corruptible must put on incorruption, and this mortal must put on immortality . . . then shall be brought to pass the saying that is written

[Isa. xxv. 8]: *Death is swallowed up in victory.*"

Herein, then, lies the true significance of the Great Pyramid—a *monument to the truth of the Resurrection to Life Eternal*—a truth likewise revealed, but in a *corrupted form*, in the "Book of the Dead"—strictly speaking a very inappropriate nomenclature; it is a book of *Life*.

"In its higher aspects," writes Mr. Spence, in his *Mysteries of Egypt* (p. 29), "Christianity is actually the restoration and continuation of the Mysteries. And are not these actually illustrated in the Christian allegory? Are not the Descent into Hell, the Resurrection and Divine re-birth of the soul, the most powerful re-statements and corroborations of the Mysteries which the mind can conceive? It is entirely vain to describe the Mysteries, Egyptian or Greek, as 'pagan,' for the Christian faith, in its mystical sense, is in direct line of descent and development from the types so described. That it instituted a much loftier and more practical system of conduct and ethics is admitted, but let it be remembered that, while casting aside the worst superstitions of the religions which had preceded it, these were, after all, of popular origin, and had little connection with the sublime ideas inculcated by the pious priesthood of Egypt."

That the doctrines of the Christian faith are

far older than the institution of Christianity itself is borne out by numerous writers, and in fact is told us by St. Paul, who says: "May the Almighty confirm you by the preaching of Jesus Christ through the revelation of a mystery [secret], *hidden for ages of time, but now displayed through the prophetic writings* [the Scriptures] . . . and revealed for obedient faith to all the heathen" [or nations]—Rom. xvi. 25-26 (Fenton's trans.). As St. Paul here affirms, it was not until the Scriptures were written that this "mystery" was correctly revealed, hidden as it had been—as in the Egyptian "Book of the Dead" and other ancient literary sources—for ages of time previously.

"The doctrines of the Incarnation, the Virgin Birth, the Resurrection, the Father-God and others, believed to be specifically Christian, were Egyptian ages and ages before the present era began. The 'Book of the Dead' contains a true decipherment of the symbolic language found depicted in stone in the Pyramid itself, teaching their belief as to what occurred to the spirit after leaving the body, and what it had to pass through before it could reach the Grand Lodge above, thus pointing out and laying down a guide to our thoughts and actions while in this sub-lunary abode . . . by learning to obey the principles of Truth, Justice and Morality, in this life. . . . In the double symbolism of the Pyramid

and the Ritual lie the strongest evidence of their correspondence.”—Dr. Albert Churchward in *Signs and Symbols of Primordial Man* (p. 397).

The distinguished French Egyptologist, M. Alexandre Moret, in his *Gods and Kings of Egypt*, has stated: “All the sacred imagery identified later with New Testament accounts, an accurate forecast of the purpose of the Messiah’s coming, the manner of His death, the rites of the Last Supper, and in fact, innumerable details of our Lord’s life and teaching, were proclaimed in Egypt thousands of years before His actual advent.”

It is not surprising, therefore, that Egypt was the earliest country in which Christianity permeated the whole body of the people, since they could recognize many an old belief in it, since the Osirian faith of ancient Egypt was merely the forerunner of Christianity.

“The writers of the Pyramid Texts [funerary compositions cut on the walls and passages in pyramid burial-chambers of the Fifth and Sixth Dynasties at Sakkarā],” says Sir Wallis Budge, “more than fifty-five centuries ago, dreamed of a time when heaven and earth and men did not exist, *and when death had not been created**. . . . But

* “Court not death in the error of your life; neither draw upon yourselves destruction by the works of your hands: *Because God made not death; neither delighteth He when the living perish.* For He created all things

that time was very remote. . . . Meanwhile *death had come into the world* [Gen. ii. 17; iii. 19], and since the religion of Osiris gave man a hope of escape from death, and the promise of everlasting life, the spread of the cult of Osiris was assured."—*Book of the Dead* (British Museum Publications, 1920).

Ancient traditions clearly show traces of the connection between the Great Pyramid and the Egyptian (so-called) "Book of the Dead," in its origins even older. That quoted by the Arabian writer, Abd-al-Hokim, for example (already referred to in another connection), alludes to the Great Pyramid as containing representations of "divers celestial spheres and stars . . . and the books that treat of these matters"; while Masoudi also states that in it "were inscribed the heavenly spheres

that they might have being. . . . God *created* man for incorruption, and made him an image of His own proper Being; but by envy of the Devil death entered into the world, and they that are of his portion make trial thereof."—*Wisdom of Solomon* ii. 12-14, 23-24.

In view of the foregoing, the following remarkable statement by Professor Crew, of Edinburgh University, speaking at the British Social Hygiene School at Cambridge, on July 31, 1929, is significant: "It is of the utmost importance," he said, "that we should free ourselves once for all of the notion that death is a necessary attribute or an inevitable consequence of life. Science, as well as religion, affirms that, in the future, mankind may, if it be so desired, not only remain permanently youthful [see Isa. lxv. 20], but also may live for ever" [see Rev. xxi. 4].

and figures representing the stars and planets in the forms in which they were worshipped . . . and also their writings."

We know, however, that the Great Pyramid contains no such inscriptions or representations of the heavenly bodies such as these traditions infer. It is only when we turn to the "Book of the Dead," that we find the passages of its "Secret House" inscribed with such hieroglyphic texts, and adorned with similar mythical figures and stars. That is to say, tradition has identified the inscribed passages of the *allegorical* structure described in the "Book of the Dead," which the soul of the departed is represented as traversing on its journey of purification, with the actual passages of the Great Pyramid.

The title by which this collection of ancient texts is generally known—"The Book of the Dead"—is not that properly belonging to it. In its final revision, made during the Twenty-sixth Dynasty, when it reached the form in which we now have it, it was called "The Book of the Master of the Hidden Places" (Adams), a title found at the close of the Rubric at the end of the 162nd chapter. The appropriateness of such a title is evident in a literature which reveals in writing the allegory of the secrets contained in the hidden passages and chambers of that House of Mystery—the Great Pyramid.

This connection is borne out by a tradition

extant with the priests of Memphis that the Great Pyramid was the "secret house" wherein the neophyte was initiated into the mysteries of Egypt, which in turn, has given rise to the idea that the Great Pyramid was a Temple of Initiation into the Mysteries, its secret passages, dark solitudes, and mysterious chambers, being regarded as a fitting place for initiation into those mysteries which were the forerunners of the Eleusinian rites of the Greeks. Seeing, however, that its upper passages and chambers were effectively sealed up during building and made impossible of access, such use could never have been made of the Great Pyramid in actuality, though Marsham Adams appears to have thought it was so used. In the *Book of the Master* he writes:—

"With the sacred writings in hand I went through the secret places of the Great House; and I greatly doubt whether anyone will do the same, bearing in mind the traditions of the priests, and picturing to himself the midnight watch of the lonely neophyte amid the impenetrable darkness of those solemn chambers, without recognizing how apt was that awe-inspiring structure for the initiation into the secrets of the unseen world" (p. viii).

Seeing, however, that the existence of the Pyramid's chambers must have been known to the priests for a considerable time after it

was completed, even if only by tradition, they very probably regarded the structure as a *symbolic* Temple of Initiation, and a symbol of the national religion.

The idea, too, that the Great Pyramid was a Temple of Initiation has, in the past, had many supporters. All the symbols of the Masonic craft are to be found geometrically expressed therein centuries before Solomon raised his Masonic Temple. It is not surprising, therefore, that Masonic writers, more particularly American and Continental, have been more inclined to refer to the Great Pyramid as the origin of their craft, than to the Jachin and Boaz of King Solomon, one authority, indeed, considering it "highly probable it was *exclusively* devoted to this purpose."

"The theme that Freemasonry emanated from this building is by no means new or original; on the contrary, it has been referred to by several writers on ancient Freemasonry. . . . If Freemasons did not build the Pyramid, the Pyramid built Freemasonry, and that in such a profound manner that over 4,000 years has not obliterated the landmarks of our order, or revealed the secret arts and hidden mysteries therein taught and contained, to be solved and brought to light in these latter days."—Thomas Holland in *Freemasonry from the Great Pyramid of Ancient Times*.

Another Freemason writes (Dr. Albert

Churchward, in *Signs and Symbols of Primordial Man*) :—

“After long and careful investigation we are now able to prove the Origin and Antiquity of Freemasonry and of the many and divers rituals, so-called, which have been in use for the past few hundred years, will show that the whole principles and tenets of the craft are the truest copy we have in existence, passed on from one generation to another, of the Eschatology* of the Egyptians. . . . The signs, symbols, rites and ceremonies, and the principles inculcated, were identical with the Eschatology of the ancient Egyptians, carried out of Egypt by Moses and the High Priests, who came from Egypt and were afterwards known as the Druids, and various origins, symbols and rites, practised in other parts of the world, were identical. . . . We contend that the Great Pyramid of Gizeh was built in Egypt as a monument and lasting memorial of this early religion, on true scientific laws, by divine inspiration and knowledge of the laws of the universe.

“Indeed, we may look on the Great Pyramid as the first true Masonic temple in the world, surpassing all others that have ever been built, with their secrets depicted in stone, symbolically, to be read by those who have been initiated into the secret mysteries of their religion, after having passed through the various degrees, for it was only men of

* *Eschatology*, the doctrine of the last or final state of things, as death, judgment (Dict).

the greatest honour and integrity who could possibly hope to attain to the highest or most sublime degree, and then only after long and patient study and many trials had been gone through to attain that end, and here in stone is set forth the passage of the *Tuat* [Egyptian underworld] and Amenta" (pp. 9—10).

"The Great Pyramid, when properly understood, far surpasses and eclipses King Solomon's Temple as a building, or any other in the world, and the wonderful secrets and hidden systems, embracing absolutely mathematical precision and workmanship, can only be thoroughly understood by its co-relationship with the Ritual—The Pyramid Text—undoubtedly the oldest in existence that we are acquainted with" (p. 379).

While Freemasons, therefore, on their own showing, are prepared to seek the origin of their craft in the Great Pyramid of Gizeh, it seems they should go even further back to the still more ancient "Book of the Dead," with its Ritual of Initiation.

That the "Book of the Dead" was definitely connected with the ancient Egyptian mysteries, and formed a ritual of initiation thereto, seems inferred from the closing words of the Rubric to chapter cxxxvii (Papyrus of Nu):—"These things shall be done secretly in the underworld; they are the mysteries of the underworld, and they are a *type* of the mys-

teries of Neter-Khert" (one of the names of Egyptian underworld).

It requires, indeed, no very close study of this remarkable collection of texts and prayers to notice the close resemblance existing between its Ritual and that of Freemasonry. It is full of pass-words and signs which the soul had to give on its journey of purification towards its goal in the "Chamber of the Open Tomb," while many of its vignettes clearly suggest the origin of Masonic insignia, such as the apron and collar.

This identification by Marsham Adams of the close connection that exists between the "Book of the Dead" and the Great Pyramid has been objected to on the grounds that "his 'correspondences' are entirely superficial, artificial, and in some cases, wholly false" (Kingsland)—a sweeping statement hardly likely to carry conviction, and one to which Sir Gaston Maspero's endorsement of Marsham Adams is sufficient answer.

It is true, however, that Marsham Adams did carry some of his points of identification too far at times, and professed to see correspondences where none existed, as, for example, in the well-shaft leading from the lower end of the Descending Passage up to the Grotto, and thence to the lower end of the Grand Gallery. Since this was an artificial passageway, however, forced *after* the Pyramid was constructed, it did not form part of the

Pyramid's design or symbolism. The Grotto itself, however, he correctly identified as the "Well of Life" in the Ritual.

One or two mis-applications, however, such as this, or an error in stating granite for limestone (not very material in the case in point), do not warrant such sweeping criticism as being "wholly false." Marsham Adams was—like Piazzzi Smyth—a pioneer in this particular application of the Great Pyramid, and like the latter, sometimes allowed his enthusiasm to run away with him. Just as Smyth unfortunately saddled his thesis with more than it could carry, thus giving a handle to his critics, so did Marsham Adams, but which he would doubtless have avoided had he had the knowledge we now have respecting that structure. Not only did Sir Gaston Maspero endorse his thesis, but also drew attention to the fact that no other Egyptologist had previously investigated the problem of such connection between the Great Pyramid and the "Book of the Dead." It would have been unusual, therefore, if Marsham Adams, as a pioneer, had not made some mistakes. And in spite of certain misapplications and occasional straining of correspondences, the present writer endorses the following comment on the part of Mr. Langford Garstin in the "Foreword" to his reprint of Marsham Adams's two volumes:—

"It is very remarkable, especially in view

of the widespread interest that has been focussed upon certain explanations of the meaning of the passages and chambers of the Great Pyramid, that more attention has not been paid to the conclusions reached by Marsham Adams, particularly when one reflects on the light they throw upon a variety of problems" (p. 20).

Objections have also been raised against his thesis on the following grounds: That the Great Pyramid was sealed up from the beginning and was therefore never intended to be entered or examined; consequently how could the priests, or anyone else, know of these identifications? Also, how, for the same reason, could these passages and chambers have been intended to symbolize or express anything?

Secondly: Since the form of the "Book of the Dead" in which these correspondences appear—particularly in the order of the chapters, which do not follow their relative antiquity, the one claiming to be the oldest being the 130th (just as in the Bible the oldest book, that of Job, is 18th in order)—dates from as late as the Twenty-sixth Dynasty (about 650 B.C.), knowledge of the nature of the interior of the Great Pyramid had by then been completely lost or only remembered vaguely by tradition.

Thirdly: Late as was the final compilation of the "Book of the Dead," it was not

till the ninth century of our era that the Pyramid was entered and the nature of its passages and chambers revealed, while it was considerably later still before the casing stones were stripped off, and the courses of masonry and the true entrance, with its gable-stones—highly important symbolically—uncovered. How then is it possible to claim similarity of purpose between them?

Strange it is how narrow people become in their reasoning when blinded by prejudice, and trip over obstacles in their way instead of trying to remove them by seeking a logical way out of their difficulty, but resort to the simple (though childish and unconvincing) alternative of pronouncing the matter purely imaginative, artificial, or, at best, mere coincidence. To such we would commend the very true observation by Mr. Lewis Spence quoted at the opening of this chapter.

The points of correspondence, however, between the various stages in the ritual contained in the "Book of the Dead," and the passages and chambers of the Secret House, are so numerous in themselves that they constitute a check upon each other, and in so doing preclude the idea of their arising from such fortuitous causes.

The true explanation, of course, is that given by Sir Gaston Maspero in his endorsement of the thesis of Marsham Adams: "The

Great Pyramid and the 'Book of the Dead' reproduce *the same original*, the one in words and the other in stone." In other words: *both have a common origin*, in just the same way that the Babylonian story of the Deluge and the Mosaic account of the Noachian Flood in Genesis are related in origin, rather than derivative, since both describe the same event, the Babylonian version, however, being overlaid with gross materialism and polytheism, as well as incorporating grotesque mythological features.

Here again we find tradition confirming our conclusions. Tradition ascribes the *design* of the Great Pyramid to *one* person—variously called Hermes, Thoth, Enoch, Iemhotep, and other names, according to the origin of the tradition (refer Chap. IV above)—confirmed by no less an authority than Sir Flinders Petrie (see p. 96 above), all clearly referring to the same individual. Now the Egyptians themselves ascribed the "Book of the Dead" to Thoth, one of the various names of this individual, the god of writing, in which capacity he is frequently represented in the Ritual itself.* To him also was ascribed the sciences

* "As a whole, the 'Book of the Dead' was regarded as the work of the god Thoth, the scribe of the gods, and was thus believed to be of divine origin; it was Thoth who spoke the words at the Creation, and as advocate and helper of the god Osiris, and therefore, to every believer in Osiris, the ascription of the authorship to him is most fitting" (Budge).

of astronomy, geometry, and mathematics, to which ascription is also due his connection with the Great Pyramid (since that structure is based upon these sciences) as found in the tradition preserved by Ibn Batuta, that "the Pyramids [Great, Second, and Third] were constructed by Hermes [the Greek equivalent of the Egyptian Thoth], the same person as Enoch" (refer Enoch tradition cited above in Chap. IV).

When, therefore, we go back to their respective *origins*—and this is the only proper test to apply, as well as being the only logical one—the identity of the allegory contained in the Great Pyramid and in the Egyptian "Book of the Dead" is easily accounted for.

"Some of Marsham Adams's theories," writes Mr. Garstin in his Foreword, "will doubtless still not find acceptance in certain quarters, but on one point at least, and that of great importance, it may confidently be affirmed that his conclusions are incontrovertible, namely the definite relationship that he has established between the 'Book of the Master' as he preferred to call it, and the pyramid of Khufu, the 'House of the Hidden Places.' The evidence which can be adduced in support of this hypothesis is such as to place the matter beyond all reasonable doubt, even in the mind of the most sceptical."

The argument (referred to above) that, owing to the piecemeal manner in which the

"Book of the Dead" was compiled, and the late date, compared to that of the Great Pyramid, at which it reached its final form wherein these correspondences are supposed to be found, it is impossible to claim any connection between them, appears to have been provided for by Marsham Adams himself in the following (p. 42, in Mr. Garstin's edition) :—

"Now the masonic symbolism of the Great Pyramid affords a simple and practically indestructible means for perpetuating the doctrine of Egyptian wisdom. That expression, once formulated, was never repeated; other tombs and pyramids of Egypt claiming kinship only by subordinate and particular features with the work of the Grand Master. While, then, the written records of the Ritual, none of which now extant probably possess a higher date than that of Khufu, were liable to change and error, no lapse of time could impair, no variations could affect, in the secret places, the masonry of the Pyramid of Light. This embodiment, at once secret and unalterable, forming literally a Masonic Ritual of the whole doctrine of Light, accounts for the singularly piecemeal fashion in which the sacred words were committed to writing."

Marsham Adams thus appears to make the "Book of the Dead" and the Pyramid both contemporary with the reign of Khufu ("none [of the written records of the Ritual] now extant probably possess a higher date than

that of Khufu"). One chapter, at least, however, claims to have been written—or "found"—in the reign of Hesepti, of the First Dynasty, while Sir Wallis Budge, in the Introduction (p. xxxvi.) to his translation of the "Book of the Dead," says of the 64th chapter that, judging from its title—"Chapters of Coming Forth by Day"—it would seem that, as early as Senti's times [First Dynasty], these chapters had become so numerous that it was all important to compose or edit one of the chapters which then existed in such a way that it should contain all the knowledge necessary to the dead for their salvation. If this view is correct, we have here an extraordinary proof of the antiquity of certain parts of the "Book of the Dead."

The "Book of the Dead," therefore, is clearly of greater antiquity than the time of Khufu; so also were the plans of the Great Pyramid. A *common origin* for both is thus the logical explanation of the obvious correspondences between them.

"It is only by studying the 'Ritual or Book of the Dead,'" writes Dr. Churchward (*Signs and Symbols of Primordial Man*), "that anyone can really understand the meaning and significance of the Great Pyramid—in fact, here lies the *Ritual* written in stone. This *Ritual* of the Resurrection was the Egyptian 'Book of Life,' and the account which this Scripture gives of itself is that *it was a Revelation*

made by Ra, the Holy Spirit. It was given to Horus the Son, who converses with the Father in Heaven. Horus speaks of it as the Word of God, and as the Sayer of the Sayings to those who are living on earth, and to the 'breathless ones in Hades.' "

The writer has often been asked if he thinks the Pyramid's top-stone is in existence somewhere, and that the structure will be completed when it is—if ever—discovered and placed in position. The only answer that can be given is that such discovery of the top-stone is still a possibility, though whether it would lead to the restoration of the Pyramid to its originally designed perfection it is impossible to say.

We have, however, suggested (*Mystery of the Great Pyramid*, pp. 73-76) that the allegory symbolized by its missing top-stone implies that, for this allegory to be fully carried out, such completion will some day be undertaken—perhaps under the guidance of the Great Architect Himself.

It has been suggested in the past that the top-stone of the Pyramid may perhaps be hidden in some, as yet, undiscovered chamber in the structure itself, or buried in the sand round its base. The clearance of the base, however, during the survey a few years ago did not discover it, and as regards the other suggestion, since the Pyramid had been completed as far up as its existing summit when

the top-stone was rejected, the latter could not have been hidden in the masonry afterwards. It is not impossible, however, that it has been incorporated as a core in one of the smaller pyramids on the Gizeh Plateau (such as the Third—or Menkaura's pyramid)—which are solid structures throughout, and were all built later than the Great Pyramid.

Regarding, too, the idea that there are other passages and chambers in the Great Pyramid, many—and fruitless—attempts have been made in the past by investigators to discover such additional passages, notably by Colonel Vyse, who made an extensive excavation in its south face, at a level corresponding to the entrance in the north side, in order to test a theory he held that it contained a second system of passages entered from the south, and lying the same amount westwards of the Pyramid's central vertical plane as its north entrance does eastward thereof. After three months of fruitless labour, without coming across any indication of such passages, the idea was abandoned, Colonel Vyse expressing astonishment that such huge masses of masonry, as the Great and Second Pyramids, should be virtually solid constructions, and that it was difficult to understand a sufficient explanation could be given for the erection of such structures merely to mark the position of a tomb. Thus, even those who had never regarded the Great Pyramid

as anything else, have nevertheless been obliged to admit it was probably something much more than a tomb, perhaps serving a double purpose, but unable to suggest what that other purpose might be.

Thanks, however, to our increased knowledge to-day of the Great Pyramid and its purpose, few, if any, of those who have studied it at all thoroughly, share the opinion, at one time widely held, that there are any passages or chambers other than those with which we are now familiar. For its present passage-system so completely meets all the necessary requirements of this "witness in the land of Egypt" that any additional passages or chambers are not only superfluous, but would spoil the wonderful harmony and symmetry of its internal construction.

While the idea of restoring the Great Pyramid, refacing it with its casing—which would first entail refacing the existing core-masonry, now very broken and dilapidated—and setting up its top-stone, may seem an almost impossible task on account of its immensity—a task, too, with apparently no useful purpose behind it, but of purely archæological and sentimental interest—it does not necessarily follow it will therefore never be undertaken. A past generation might well have thought the same of projects—particularly those of a constructional nature, such as the great Sennar Dam on the Blue

Nile, completed in 1925, in some respects even more wonderful as a piece of engineering than the Great Pyramid itself, or even the still larger Lloyd Barage at Sukkur, on the Indus, recently opened—which have been carried out in recent years, under conditions, too, that have been anything but easy.

There are, however, many who foresee the time when reparation of the Great Pyramid will be undertaken, and their numbers are growing as more come to realize the true significance of this unique structure, the very stones of which seem to rebuke the idle charges of pride and folly, ostentation and tyranny, that have been heaped upon its architect by ignorance in the past. The erroneous idea that it is merely the tomb—or was intended to be—of a pagan monarch is dying, and must soon be discarded altogether, since the evidence against it is too strong, though owing to the theory having been entrenched for so long with past schools of Egyptologists its demise is naturally a slow one.

“One must rejoice,” wrote Bonwick nearly sixty years ago, “that there are those who look beneath the surface of things, and dig for hidden treasure. In spite of the *pook-pookings* of men who are ever preaching about ‘Facts—plain facts, sir,’ there really are strange revelations from the Pyramid which are recognized by thoughtful, sober citizens of the world. An increasing number

are beginning to ask, with the Rosicrucian :
 'Is it reasonable to conclude, at a period when knowledge was at the highest, and when human powers were, in comparison with ours at the present time, prodigious, that all these indescribable physical efforts, such gigantic achievements, were devoted to a mistake? that the myriads of the Nile were fools, labouring in the dark?'"

It is interesting to recall that the idea of restoring the Great Pyramid, an act worthy of the world's greatest religious monument, was advanced sixty years ago by the late Rev. F. R. A. Glover, M.A., in a letter addressed to Piazzzi Smyth, and dated from Cairo, November 12, 1874, in which the following passage occurs* :—

"Is not the Pyramid essentially and eminently the emblem, in its perfections, of the truth and equity of the Godhead? Will it, then, be permitted that the monument erected to exhibit and declare the attributes of God to the Universe shall be left to dwindle, by wasting influence of the elements, into nonentity? Is that monument, which bears God's mark on the earth, to be allowed to disappear? No. You and I may not live to see its restoration; but what if we did? Yet it is no more impossible to restore it than it was to build it—undoubtedly less so. It wants but the will,

* Quoted by Charles Casey in an appendix to the fourth edition of his *Philitis*.

and all the Lord's people will be willing in the day of His power, when once again shall be raised the words, 'Grace, grace, unto it.' "

These words occur in Zech. iv. 7: "He *shall* bring forth [note future tense] the *headstone* thereof with shoutings, crying, Grace, grace unto it."

The vision in which these words occur is one to be fulfilled in the last days, of which the completion of the Temple of the Restoration by Zerubbabel is taken as a *type*, Zerubbabel as Prince of Judah in the captivity being a type of Messiah the Prince—the Great Architect of the world restoration era now approaching. Note also that "headstone" can apply only to a pyramidal form of construction, wherein all four sides meet and are joined together in the apex or top corner-stone, whereas any other form of building can have more than one headstone. Compare the similar allusion in Job xxxviii. 4-6, which clearly refers to some well-known structure on earth, the building of which is made an analogy for the creation of the earth. Jehovah asks Job: "Who hath laid the measures thereof? or who hath stretched the line upon it? Whereupon are the foundations thereof fastened? or *who laid the corner stone thereof?* " The shouts of triumph (verse 7) accompanying the placing of the corner-stone in position clearly infer it is the *last* act to be achieved.

and therefore at the *summit* of the building, a condition only to be fulfilled in a pyramid. And the Coptic version of this passage brings this out more forcibly—"Who hath laid the corner stone *upon* it?"—clearly meaning a *top* corner stone, since in no other position could a stone be described as laid *upon* a building.

Does not Zechariah's vision, then, taking Zerubbabel's Restoration of the Temple—a restoration of that building whose plans were divinely revealed to Solomon as the one structure representative of Jehovah on earth amidst the paganism of the surrounding nations—as a *type*, seem to look forward to that greater, world-wide restoration era yet to come, when, under the guidance of the Great Architect Himself, another structure, also divinely revealed, and greater than Solomon's Temple, erected, as the late Rev. Glover has said, "to exhibit and declare the attributes of God to the Universe," will be restored to the perfection of its original plans, and the Architect bring forth its headstone amid universal rejoicing.

We have quoted the Rev. Glover to show that this idea of restoring the Great Pyramid is one that has been held for a considerable time past, and is therefore not a new-born fantasy to be lightly dismissed as a chimera. We will now quote from a present-day pyramid writer who also foresees that restoration is due

to the Great Pyramid, his views being of greater interest since he approaches the subject from an aspect completely different from that of the present author—pure symbolism.

“We surely,” he writes,* “must find it possible to preserve such a lasting world-wide, race-accepted monument as the Great Pyramid, and worthily to restore and maintain its pre-eminence as the greatest religious symbol ever created. For the unification of peoples probably no work could give greater service. Its time of complete resuscitation must come. Without doubt we shall know more how and what mysteries of religion, of philosophy, and of nature the old hierophants taught the neophyte priests.

“What do I see in the Great Pyramid that would repay its restoration, that would constitute of it an emblem of the Divine powerful enough for good to repay the great cost? I see that the people again need a symbol and a monument that will point to and stand for an ever-present conviction of the beneficence of Nature, especially living Nature, and of the necessity of her being approached, accepted and treated everywhere with reverence, gratitude and love . . . For by that conviction alone can our knowledge mature of those things and of that for which she stands. I see, too, in such a monument of aspirancy and of intense thought, in such an appealing, suggestive form of beauty

* *The Great Pyramid from the Aspect of Symbolism and Religion*, by Francis W. Chapman (Rider), 1931.

there must be a positive strengthening of our longing towards religious endeavour" (pp. 72, 74-75).

As a fitting conclusion to this "History and Significance of the Great Pyramid," we will revive the following extracts from a remarkable appreciation—remarkable, indeed, seeing that it was penned originally almost sixty-five years ago, when modern pyramidology as first enunciated by Taylor and Piazzzi Smyth, was in its infancy—written by the Rev. Joseph Taylor Goodsir, F.R.S.E., in his *Seven Homilies on Ethnic Inspiration*, 1871, and reprinted as an Appendix in Seiss's *Miracle in Stone* (14th edition). It sums up the significance and purpose of the Great Pyramid so admirably, that we think it not only justifiable to reprint here certain passages from it after so long a lapse of time, but also because it will be of interest to present-day readers:—

"Several important things fully warrant us in maintaining that there was, when the Great Pyramid was builded, and that there is now, a very sufficient final cause for the rearing of such a scientific symbol as it has the best claim to be considered. The urgency of this final cause may be seen to have been great at first, because the two chief nations of antiquity, Chaldea and Egypt, had adopted sabaism as their worship [refer Chap. VI, p. 162, above, and the association of the Great Pyramid with sabaism], either by itself or mixed with

other superstitions ; and secondly, it is great in these times when a lamentable number doubt or avowedly disbelieve, and even laugh at, that Biblical record to which the world owes its present freedom from sabaism and innumerable other evils.

“ Certain scientific and physical conditions required that this magnificent protesting fabric should be placed in Egypt rather than in Babylonia, the seat of the undivided sway of sabaism. . . . The Egyptians would appear to have retained and handed down a partial knowledge of the true character of the Pyramid, until it became gradually obscured, and was at last quite lost. But amongst the worshippers of the Lord God the knowledge of its true character was long preserved, as would appear from the symbolic use made of it in the Book of Job [quoted above] and elsewhere in Scripture [e.g. Jer. xxxii. 20: “Thou hast set *signs* and wonders in the land of Egypt, even unto this day.” Compare Isaiah xix. 19-20]. The traditional knowledge of it, or of the science symbolized by it, preserved amongst the people of God, was one means, we believe, of saving them from that worship of the sun, moon and stars which Job declared to deserve, even on its first appearance, death at the hands of the magistrate * . . . and also that it might show us

* “ If I beheld the sun when it shineth, or the moon walking in brightness ; And my heart hath been secretly enticed, or my mouth hath kissed my hand : This also were an iniquity to be punished by the judge : for I should have denied the God that is above.”—Job xxxi. 26-28.

in these last days how God supplied physical knowledge to primeval man, that he might be warned against such superstitions as sabaism, and that the possession of a measure of such knowledge might preserve his true worshippers from many destructive errors.

"This primeval monument, after the lapse of more than four millenniums since its construction, is subserving at this very day most important purposes as respects wisdom and knowledge. . . . It testifies to the importance of the exact and of the physical sciences—terrestrial and cosmical—not merely from the utilitarian, but from the religious point of view. It shows that certain monotheists possessed extraordinary knowledge in these sciences just when the whole world was going astray in the worship of sun, moon and stars, and it thus seals, as with a divine impress, left on adamantine materials, the truth that sound science is not only a handmaid but a defender of sound religion.

"Such are the things taught us at this day by the Great Pyramid, as there are noble men of science sufficiently animated with Christian truthfulness and courage manfully to proclaim. We thus see a united science, righteousness and religion, testifying from the Great Pyramid with a re-awakened mien, just as they were intended to do more than 4,000 years ago. The oldest and noblest building is thus seen to be at one in testimony and in spirit with the oldest and noblest Book. God is making

that great name for Himself by the Great Pyramid at this day, which the builders of the Tower of Babel sought to make for themselves.*

"Putting together, then, the various things we have insisted on, I ask whether it is, after all, so wild and chimerical an idea that God should have stirred up, in the primeval age of the world, men who knew Him, and who inherited or had imparted to them a divinely-taught science to construct this greatest of all monuments? Is not this rather the *rational* view to take of it? Here, for one thing, is a scientific symbol, as measurements, calculations and reasonings of an incontrovertible kind prove it to be. This matter stands on its own basis. Again, Scripture contains a number of allusions and symbolic expressions which find no object so exactly and completely suitable as this confessed 'wonder' of the ancient world. This also stands on its own basis. Still further, some such sufficient reason, as the symbolism of the Great Pyramid presents, is required to account for the wise and sensible views of the

* The reference here is to Jer. xxxii. 20: "Thou hast set signs and wonders in the land of Egypt, even unto this day . . . and hast made thee a *name*, as at this day." The word translated "name" (*shem*)—like *matsebha* in Isaiah xix. 19 (rendered "pillar")—also means a "monument," or something of renown, as precisely the Great Pyramid is. Jeremiah's reference, therefore, may be rendered:—"Thou hast set signs and wonders in the land of Egypt . . . and hast made to thee a *monument* which stands at this day" (i.e. when Jeremiah was in Egypt).

Cosmos entertained by the true worshippers of God from the earliest times. This is certainly a consideration of weight not easily cast aside. In this consideration is also seen the inestimable benefits, historical, moral and religious, conferred on us by the scientific character of the Great Pyramid at this day.

"Here, then, are firmly grounded, quite independent reasons which unite in supporting the theory as to the divine authorship of the Great Pyramid. We can discern clearly in our subject also the illustration and confirmation of this grand moral truth: Man's ambitions and designs for making a name to himself, as a power without God, are invariably blasted and end in shame, but God's works endure and testify to the glory of that Name which will outlast the sun, moon and stars."

THE END.

GREAT PYRAMID BIBLIOGRAPHY

(Books wholly, or in part, on the subject of the
Great Pyramid.)

- GREAVES, John, Savilian Professor of Astronomy at Oxford: *Pyramidographia: a Description of the Pyramids in Egypt*, 1646. The earliest book in the English language on the Great Pyramid.
- VYSE, Col. H. H.: *Operations at the Pyramids of Gizeh in 1837* (3 vols), 1840-42.
- TAYLOR, John: *The Great Pyramid: Why was it Built? Who Built it?* (Longmans), 1859.
- SMYTH, Prof. C. Piazza, F.R.S.E., F.R.A.S., Astronomer Royal for Scotland: *Our Inheritance in the Great Pyramid* (1864); 5th ed. (1890).
- : *Life and Work at the Great Pyramid* (3 vols., 1867).
- BONWICK, James, F.R.G.S.: *Pyramid Facts and Fancies* (Kegan Paul), London, 1877.
- CASEY, Charles: *Philitis: The Great Pyramid* (Carson Bros., Dublin), 5th ed., 1880.
- SEISS, Joseph A., D.D.: *A Miracle in Stone* (Philadelphia), 14th ed., 1878.
- WAKE, C. Staniland: *Origin and Significance of the Great Pyramid* (Reeves and Turner, London), 1882.
- PETRIE, Sir W. M. Flinders: *Pyramids and Temples of Gizeh* (Field and Tuer, London), 1883; Abridged edition, 1885.
- HOLLAND, Thomas: *Freemasonry from the Great Pyramid of Ancient Times*, 1885.
- PROCTOR, Richard A.: *The Great Pyramid: Observatory, Tomb and Temple* (Longmans, London), 1883; New edition, 1893.
- JOHNSON, V. E., B.A.: *Egyptian Science from the Monuments and Ancient Books* (Griffith, Farran & Co., London), 1891 (Chaps. i and iv).
- ADAMS, W. Marsham: *House of the Hidden Places* (Murray, London), 1895.
- : *The Book of the Master* (Murray, London), 1898.
- BARBER, Com. F. M. (U.S.N., ret'd.): *Mechanical Triumphs of the Ancient Egyptians* (Kegan Paul, London), 1900.
- COTSWORTH, Moses B.: *The Rational Almanac* (Pyramid section) (author, York), 1902.

- GARNIER, Col. J.: *The Great Pyramid: its Builder and its Prophecy* (Banks, London), 1905; Revised edition, 1912.
- CHURCHWARD, Albert, M.D., M.R.C.P., etc.: *Signs and Symbols of Primordial Man* (George Allen, London), 1910; 2nd ed., 1913 (Chap. xviii).
- EDGAR, Dr. John and Morton: *Great Pyramid Passages* (Bone and Hulley, Glasgow): Vol. I, 1923; Vol. II, 1924.
- CHAPMAN, Francis W.: *The Great Pyramid of Ghizeh from the Aspect of Symbolism and Religion* (1923); Revised and enlarged edition (Rider and Co., London), 1931.
- DAVIDSON, D. (in collaboration with Dr. H. Aldersmith); *The Great Pyramid: its Divine Message* (Williams and Norgate, London), 1st ed. 1924; 4th ed. 1927.
- STEWART, B.: *The Great Pyramid: its Construction, Symbolism and Chronology* (Covenant Publishing Co. Ltd., London), 1925; 4th ed. 1933.
- : *The Witness of the Great Pyramid* (London), 1927; 2nd edition (revised), 1928.
- : *The Mystery of the Great Pyramid* (Routledge, London), 1929.
- : *The Great Pyramid and Current Events* (author), 1929.
- COLE, J. H., B.A., F.R.G.S.: *Determination of the Exact Size and Orientation of the Great Pyramid of Gizeh* (*Survey of Egypt*, Paper No. 39) (Cairo), 1925.
- BRISTOWE, Mrs. Sydney: *The Man Who Built the Great Pyramid* (Williams and Norgate, London), 1932.
- RIFFERT, George R.: *Great Pyramid Proof of God* (Covenant Publishing Co. Ltd., London), 1932.
- MACNAUGHTON, Duncan, M.A., LL.B.: *A Scheme of Egyptian Chronology* (Luzac, London), 1932. (Note 14.)
- KINGSLAND, William, M.I.E.E.: *The Great Pyramid in Fact and in Theory* (Rider and Co., London), Vol. 1, 1932: Vol. 2, 1935.
- GARSTIN, E. J. Langford (edited by): *The Book of the Master of the Hidden Places* (Search Publishing Co., London), 1933. A reprint, in one volume, of *The House of the Hidden Places* and *The Book of the Master*, by Marsham Adams (see above), edited with a Foreword, Notes, and Appendix.
- DAVIE, John G.: *Eureka: I have Found* (author, Griffin, Georgia, U.S.A.), 1934.
- RUTHERFORD, Adam, F.R.G.S., A.M.Inst.T.: *Israel Britain, or Anglo-Saxon Israel* (Pyramid Section) (author), 1934.

INDEX TO AUTHORS QUOTED

(f = footnote)

- ADAMS, W. Marsham: *Book of the Master*, 173, 188, 194.
 ———: *House of the Hidden Places*, 15, 186-187.
 BARBER, Com. F. M. (U.S.N., ret'd.): *Mechanical Triumphs of the Ancient Egyptians*, 3.
 BAYLEY, Harold: *Archaic England*, 108.
 BIRCH, Dr. S.: *Ancient History from the Monuments—Egypt*, 96.
 BREASTED, Prof. James: *History of Egypt*, 43.
 BONWICK, James: *Pyramid Facts and Fancies*, 36, 81, 82, 209.
 BUDGE, Sir E. A. Wallis: *Dwellers on the Nile*, 72.
 ———: *History of Egypt*, 95.
 ———: *Book of the Dead*, 191, 202 (f), 205.
Cambridge Ancient History (vol. i), 6.
 CHAPMAN, Francis W.: *Great Pyramid of Gizeh from the Aspect of Symbolism and Religion*, 31, 78, 83, 166, 213.
 CHURCHWARD, Dr. Albert, F.G.S., etc.: *Signs and Symbols of Primordial Man* (2nd ed.), 103-104, 190, 196, 205.
 COLE, J. H., B.A.: *Determination of the Exact Size and Orientation of the Great Pyramid*, 33, 141.
 COTSWORTH, Moses B.: *The Rational Almanac*, 165.
 DAVIDSON, D.: *Early Egypt, Babylonia and Central Asia*, 86, 111.
 ———: *Great Pyramid: its Divine Message*, 35, 39.
 DAVIE, John G.: *Eureka: I have found*, 2, 92.
 GARSTIN, E. J. Langford: *Book of the Master of the Hidden Places*, 199-200, 203, 204.
 HEDIN, SVEN: *Across the Gobi Desert*, 110.
 HOLLAND, Thomas: *Freemasonry from the Great Pyramid*, 195.
 JOHNSON, V. E., M.A.; *Egyptian Science*, 41, 44, 172-173.
 KINGSLAND, William, M.I.E.E.: *Great Pyramid in Fact and in Theory* (2 vols.), 36, 52, 172.
 LENORMANT, F.: *Ancient History of the East*, 76, 96.
 MACNAUGHTON, Duncan, M.A., LL.B.: *A Scheme of Egyptian Chronology*, 57, 162, 177-179.
 MEE, Arthur: *Wonderful Day*, 4.

- MOREUX, Abbé Th. : *Mysterious Science of the Pharaohs*, 46.
- PETRIE, Sir W. M. Flinders : *Pyramids and Temples of Gizeh*, 29.
- PROCTOR, Richard A. : *Great Pyramid: Observatory, Tomb and Temple*, 169-171.
- RIFFERT, George : *Great Pyramid Proof of God*, 27, 74.
- SEISS, Joseph A., D.D. : *Miracle in Stone* (14th ed.), 20, 21, 47-48.
- SPENCE, Lewis : *History of Atlantis*, 101.
- : *Mysteries of Egypt*, xiii (f), 189.
- : *Myths of Ancient Egypt*, 60.
- : *Problem of Atlantis*, 102-103, 106, 107.
- : *Problem of Lemuria*, xii, 147.
- STEWART, B. : *Great Pyramid and Current Events*, 127-129.
- : *Mystery of the Great Pyramid*, 38, 186 (f).
- : *Witness of the Great Pyramid* (2nd ed.), 24, 87, 127 (f).
- VYSE, Col. Howard : *Operations at the Pyramids of Gizeh*, 5, 17, 79.
- WAKE, C. Staniland : *Origin and Significance of the Great Pyramid*, 76, 162.

GENERAL INDEX.

- Adams (Marshall). 109 (f), 186, 198
 "Almagest" of Ptolemy, 46
 Ancient Civilizations, 93-107
 —, habitat of, 106, 110
 —, origin of, 100, 106, 109
 Arabian writers on G.P., 79-85,
 [161, 192, 203
 Astrology and the G.P., 130
 Astronomical Theory of G.P.,
 [161, 168
 Astronomy, Egyptian knowledge
 of, 41, 45
 Atlantis, 101, 106
 Babel, Tower of, 163
 Belzoni (Pyr. investigator), 49
Book of the Dead, 38, 186-206
 Borsippa, Planet Temple of, 164 (f)
 Chaldean "World," 111
 Chronology (Egyptian), 177
 Cipriani, Prof. L. (quoted), 99
 Cubit, Pyramid, 130, 135
 —, Egyptian "common," 133
 Cuzco (Peru), Ancient remains at,
 [107-8
 Dahshur Pyramids, 9, 12
 Davidson (D.), quoted, 11, 13, 23,
 [39, 54, 93, 112
 (See also *Author's Index*)
 Davison (N.), 17
 Day (Vincent), quoted, 21
 Deluge of Genesis, 110-117, 202
 Denderah, Temple of, 57
 Diodorus (see Siculus)
 Edgar (Morton), 38
 Egyptologists and the G.P., 7-9,
 [187
 Engineering Achievements, 53, 107
 Enoch, 115-116, 202
 Esneh, Temple and Zodiac of,
 [57-60
 Freemasons and the G.P., 195-198
 Galileo, 46
 Garnier (Col. J.), 22
 Geometry, Origin of, 41
 —, Science of, 29-32
 Goodsir, Rev. J. T. (quoted),
 [214-218
 GREAT PYRAMID (see Pyramid,
 Great)
 Greaves (John), Astronomer, 16,
 [80
 Hedin (Sven), Explorer, 110
 Herodotus, 2, 8, 69, 72, 74, 76, 77,
 [81, 92, 133
 Herschel (Sir John), 140
 Hyksos (or Shepherd) Kings, 77
 Iemhotep, 13, 73, 92, 118, 202
 Inch (Pyramid), 130
 Josephus (quoted), 90, 98, 114, 117
 Khufu, Supposed tomb of, 70
 "Lemurian" Colony in Cali-
 fornia, 147-154
 Manetho, 77, 117
 Maspero (Sir Gaston), 111, 185,
 [201
 Mathematics, Egyptian Know-
 ledge of, 44
 Meidum, Pyramid of, 9, 12
 Mexican Pyramids, 29, 101-4, 163
 Metre (The), 134, 138
 Moret (Alexandre), Egyptologist,
 [191
 Moreux (Abbé) Astronomer, 139
 Moses in Egypt, 52, 56
 Müller (Prof. Max), quoted, 30
 Noah (Dynasty of) and the G.P.,
 [116-117

- Petrie (Sir F.), 23, 33, 40, 94, 96,
[104-105]
- Pliny, 5, 164
- Polar diameter (Earth's), 134
- Proctor, R. A. (Astronomer), 3,
[161, 168-175]
- Pyramid Building, Era of, 105
- Pyramid, THE GREAT:—
Allegory of, 188, 206
"Builder's Error" in, 142-146
Casing Stones of, 8, 33, 80, 84,
[141]
Construction of, 85-87
Core-masonry of, 34-35
Courses, number of, 37
Design of, 11-14
"Displacement Factor" of, 145
Divinely inspired, 73
Engineer's Problem, An, 32
Forced Entry into, 16, 79
Foreign Origin of, 54, 93, 97, 113
Geometrical nature of, 27, 40
Geometry of, 61-66
Grand Gallery of, 175, 185
Inscriptions on, 81, 83
Interest in, 1, 5, 16
Orientation of, 164
Problem of, 14-15
Restoration of, 208-213
Sundial, Use as a, 164-167
Surveys of, 23, 33, 141
Temple of Initiation, 194
XXXVth Masonry Course of,
[132]
Tombic Theory of, 6, 15, 18, 23
Top Stone of, 35-38, 206, 211
Unique nature of, 10, 15
- Pyramid, The Second, 6, 34, 42,
[49, 50, 167]
—, The Third, 6, 9, 34, 42, 167
- Rhind Mathematical Papyrus,
[40-43]
- Sabaism, 162
- Seiss (Dr. Joseph A.), 16, 20, 80
- Seneferu's pyramid, 9, 12
- Sethites and the G.P., 114, 116
- "Seven Wonders of the World,"
[20]
- Siculus (Diodorus), 5, 35, 40, 71,
[91, 113 (f)]
- Smyth (Piazzi), Astronomer, 19,
[22, 33, 123-4, 128 (f)]
- Sphinx (The), 1, 57-60
- "Squaring the Circle," 63
- Strabo, 5, 49 (f)
- Taylor (John), 18, 47, 123
- Thoth, 115, 202
- Uranibourg Observatory, 164 (f)
- Vyse (Col. H.), 5, 16, 17, 69, 207
- Wilkinson (Sir Gardner), 23, 80
"Wisdom of the Egyptians,"
[52, 55]
- "Year-Circle," 39, 40, 61, 131, 134
- Zodiacs, Egyptian, 47 (f), 57
- Zoser's Pyramid, 9, 11, 13